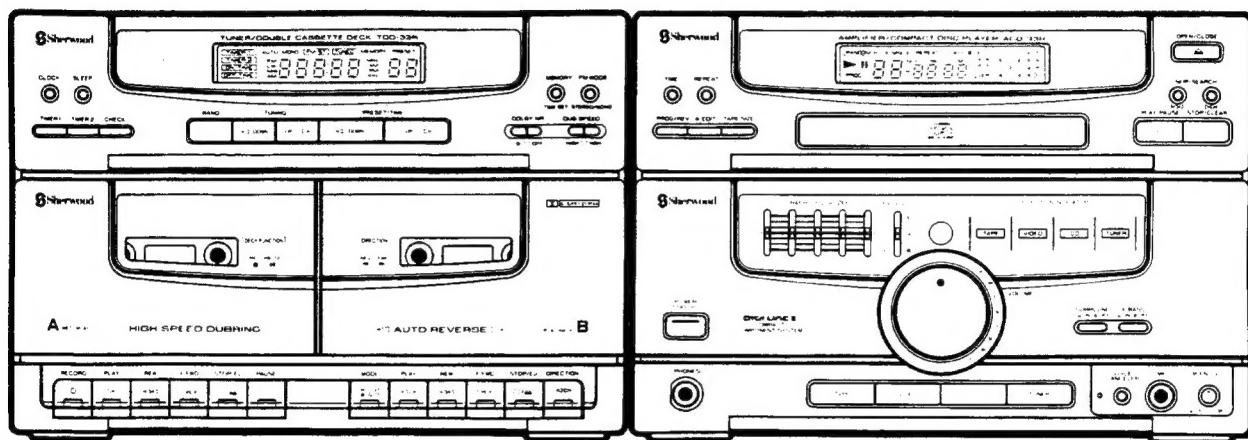


SERVICE MANUAL

P-33R (ACD-33R/TDD-33R) AMP, CDP/ TUNER, DECK



ACD-33R(AMP,CDP)

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TDD-33R(TUNER,DECK)

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 **Sherwood**

Safety Precaution ACD-33R

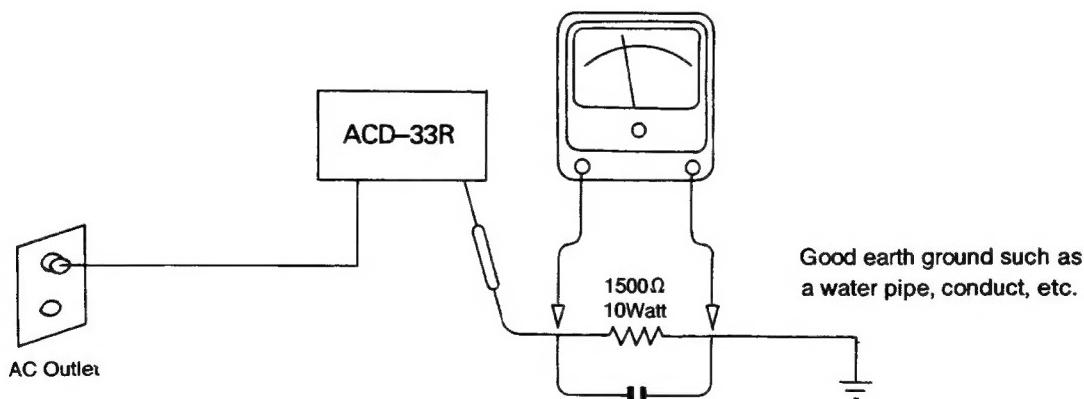
WARNING

Service should not be attempted by anyone unfamiliar with the necessary precautions on this player. The following precautions are necessary during servicing.

1. Many electrical and mechanical parts in this player have special characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristic are identified in this manual and its supplements : electrical components having such features are identified by a \triangle in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.
2. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as

terminals, screwheads, metal overlays, etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet(120V Version only).(Do not use a line isolation transformer during this check.) Use an AC voltmeter having 5000Ω per volt or more sensitivity in the following manner : Connect a 1500Ω 10watt resistor paralleled by a $0.15\mu F$ 150V AC capacitor, between a known good earth ground(water pipe, conduct, etc.)and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500Ω resistor and $0.15\mu F$ capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

AC VOLT METER
(5000Ω per volt or more sensitivity)
Reading should not exceed 0.8V



Place this probe on each exposed metallic part

Specifications ACD-33R(AMP,CDP)

Amplifier Section

Power output / ch,	
Min RMS for 1kHz with no more than 0.3% THD.	
into 6 ohms	25W
Input Sensitivity for 25W 6Ω at 1kHz	
Video	150±30mV
MIC	2±1mV
Signal to Noise ratio, IHF a wtd & EQ flat;	
Video	75dB
X - Bass 80Hz, Video at 1W, 80Hz	+8±2dB
Surround, 1ch Input, Video at 1W	+6±2dB
Frequency Response, Video at 1W, -3dB	40~20,000Hz
Graphic EQ Control, 60Hz, 250Hz, 1kHz, 4kHz, 16kHz	±8±2dB

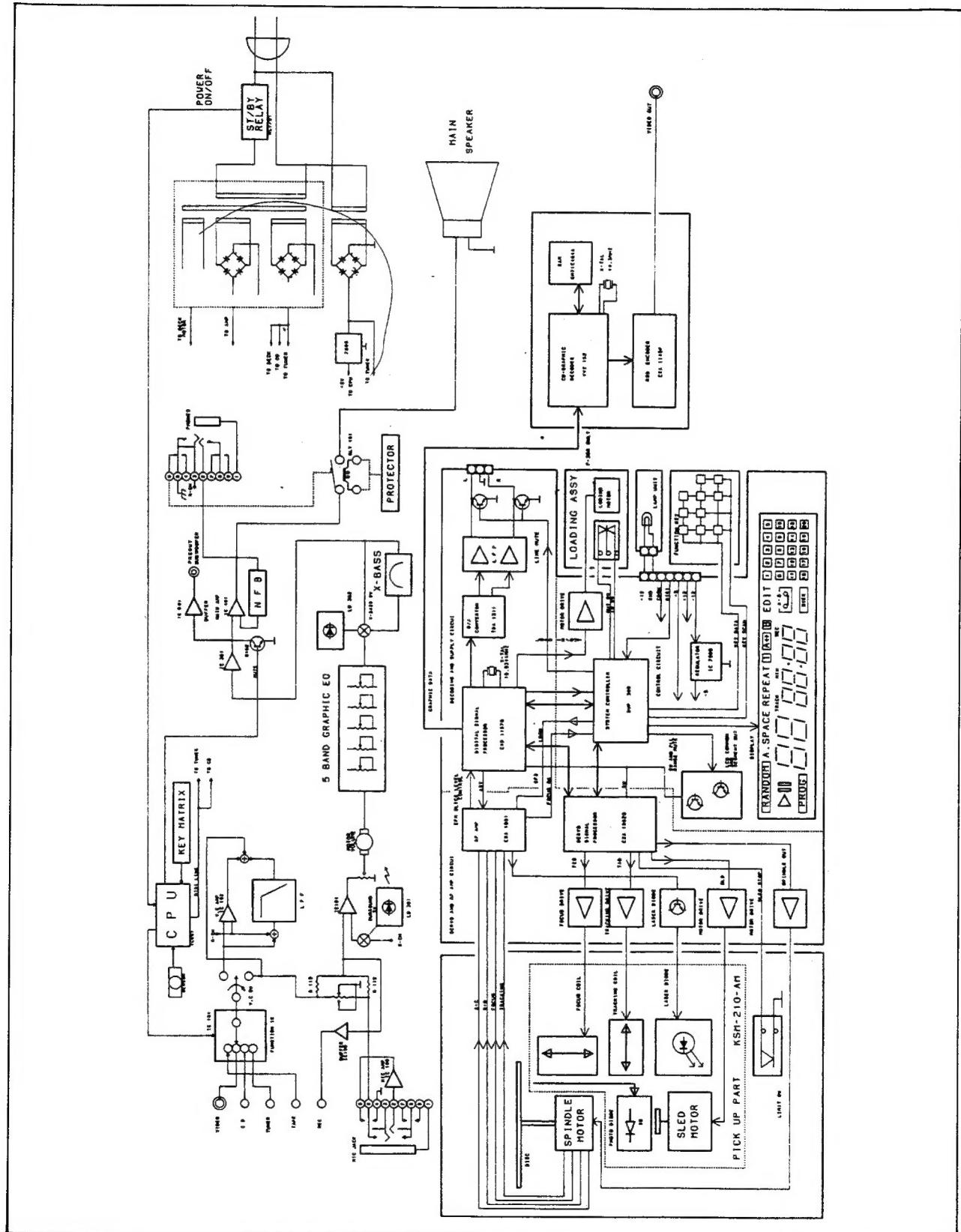
Compact Disk Player Section

Frequency Response	
20~20,000Hz	+/- 1.0dB
Signal to Noise Ratio, weighted A	85dB
Dynamic Range, weighted A	85dB
Distortion	
1kHz / 0dB	0.1%
Channel Separation, Selective	
1kHz	75dB
Channel Unbalance	
1kHz	±1.0dB
Access time	
Track → Track	1.5 sec.
Close → Music	8.0 sec.
Disc Defects	
Black DOT	600 μ m
Interrupt	600 μ m
Fingerprint	All μ m
Power Consumption	140W
Power Requirements;	
A : 120V 60Hz for USA / Canadian version	
B : 120 / 220V 50 / 60Hz for multi-voltage version(switchable)	
C : 230V 50Hz for General European version	
D : 230V 50Hz for Germanian & Italian version	
E : 240V 50Hz for British & Australian version	
F : 230V 50Hz for Swiss & Scandinavian version	
Dimensions	267(W)×188(H)×250(D)mm 10.5(W)×7.4(H)×9.8(D)inch
Weight(Net)	6.7Kg(14lbs, 11.8ozs)

Note : Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the European Standard information on regional circuit modification through use of alternate schematic diagram, and information on regional component variations though use of parts list. Design and Specifications subject to change without notice for improvement.

Block Diagram ACD-33R

Model No. : ACD-33R



Alignment Procedures ACD-33R(CDP)

1. Before Starting Adjustments

- First, open the disc tray.
- Make the adjustment with a numeric order.
- Use the dualtrace oscilloscope with high impedance(more than 10M ohm).
- Test Disc : SONY TEDS-7, SONY YEDS-4
- How to enter into the TEST MODE.
 - 1) Power off(CD Function)
 - 2) Earth R171(TEST MODE) on the Main P.C.Board.
 - 3) Power on.
 - 4) Remove the earth connection from R171
 - 5) Then, all segments appears in the display. When you press the PLAY button by turns, the TEST MODE continuously changes "TEST MODE 1" → "TEST MODE 2" → "TEST MODE 3"
- Tentative Setting of Volume
 - Set the semi-fixed resistance tentatively as follows.

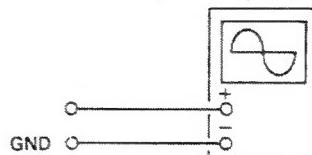
VR101(EF.Balance)	Center Position
VR102(F.Bias)	Center Position
VR105(PLL Free Run)	Center Position

2. RF PLL Free Run Adjustments

- 1) Enter into the TEST MODE1.
- 2) Earth P03(J193)(Ass'y)on the Main P.C.Board.
- 3) Connect the frequency counter to between P08(J192)(PLCK)and P01(J224) (GND)by using a probe.
- 4) Adjust VR103(PLL)with a plastic screwdriver for getting a indication in the range of 4.3218 MHz on the frequency counter.
- 5) Remove the earth connection from P03(J193) (Ass'y)
- 6) Set the player to TEST MODE3, and confirm the PLL frequency is 4.3218MHz.

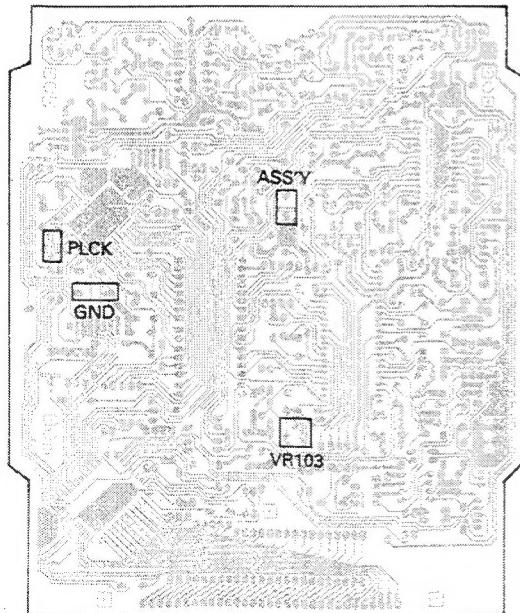
3. Focus Bias Adjustments

(Oscilloscope(DC range))



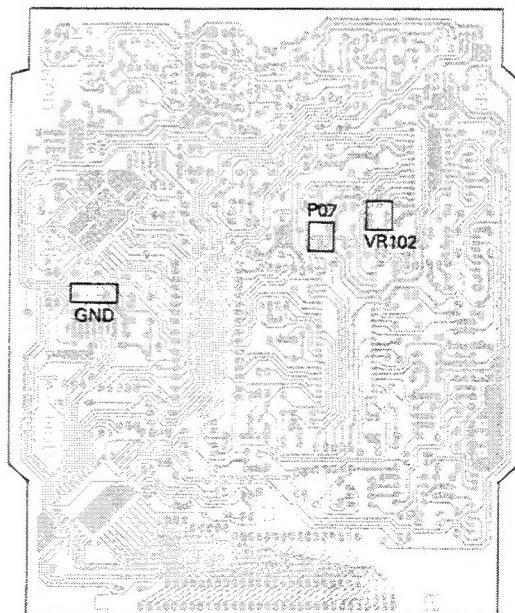
- 1) Enter into the TEST MODE1.
- 2) Connect an oscilloscope between P07(R155) (FE. Focus Error)and P01(J224)(GND) on the Main P.C.Board.
- 3) Adjust VR102(F.Bias)so that the focus error signal becomes $0V \pm 10mV$ on the oscilloscope.

Adjusting Part : Main P.C. Board(RF PLL Free Run)



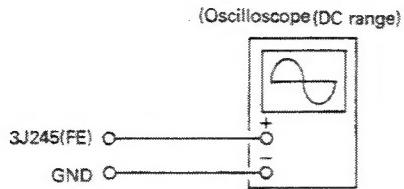
BOTTOM VIEW(Front Side)

Adjusting Part : Main P.C. Board(Focus Bias)

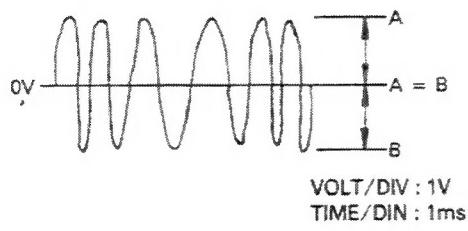


BOTTOM VIEW(Front Side)

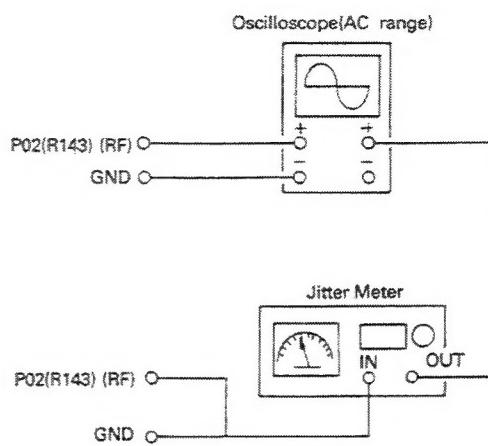
4. EF Balance(Tracking Bias)Adjustments



- 1) Set the player to the TEST MODE2.
- 2) Connect an oscilloscope between P06(R153) (TE.Tracking error)and P01(J224)(GND) on the Main P.C.Board.
- 3) Turn a disc softly with a finger and adjust VR 101(EF.Balance)so that the center of the TE(Tracking error)signal sets on 0V DC as like a following figure.

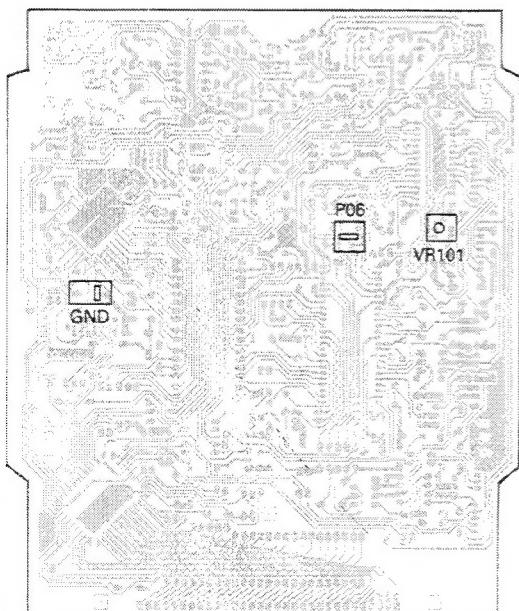


5. Adjustment of Jitter Level



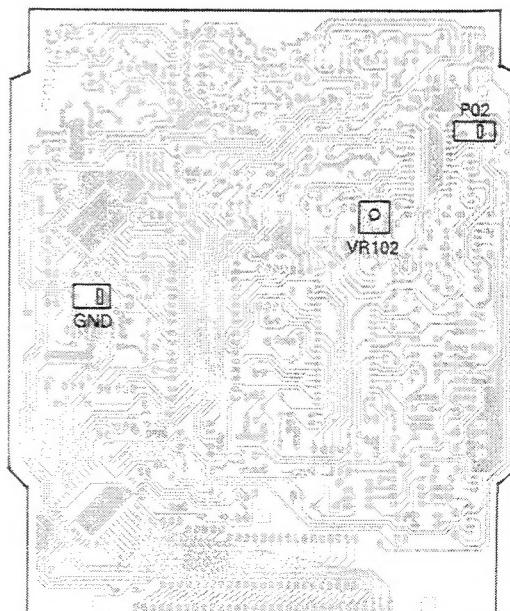
- 1) Set the player to the TEST MODE3.
- 2) Connect the oscilloscope and jitter meter as like the upper figure.
- 3) Adjust VR102(F.Bias)so that the level of jitter on the jitter meter becomes the least value.
Then a RF waveform will get with the largest amplitude and a sharp waveform on the oscilloscope.

Adjusting Part : Main P.C. Board(EF Balance)



BOTTOM VIEW(Front Side)

Adjusting Part : Main P.C. Board(Jitter Level)

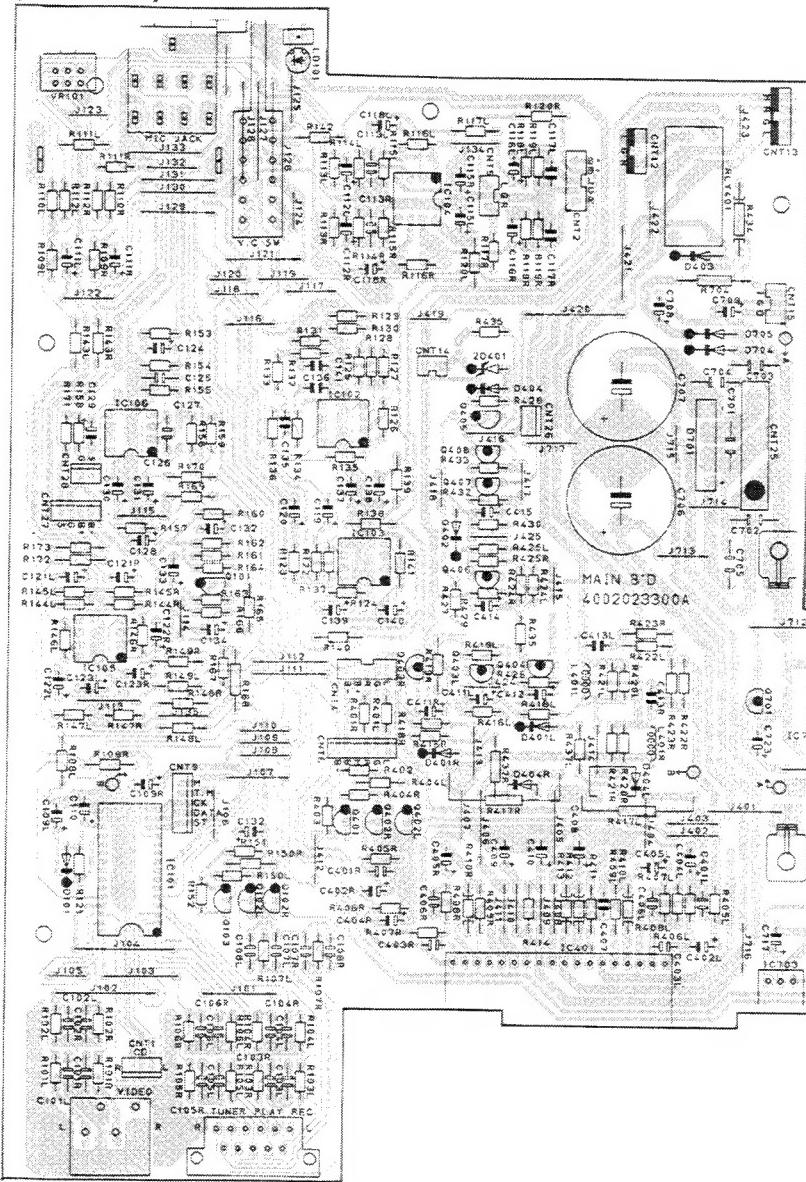


BOTTOM VIEW(Front Side)

P.C. Boards (Top & Bottom Views)

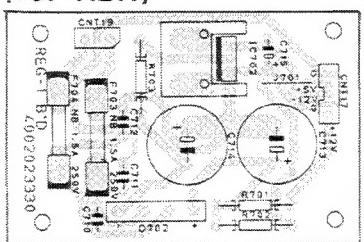
MAIN P.C.BOARD (AMP)

(TOP VIEW)

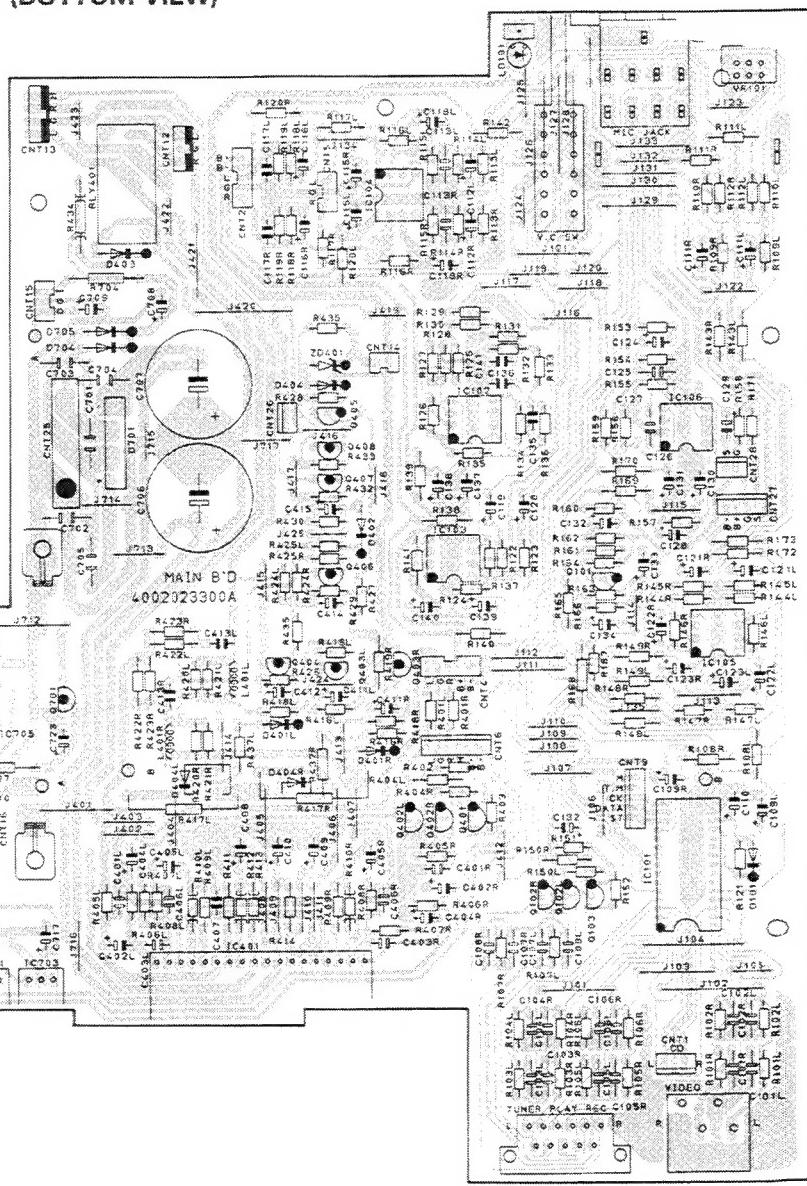
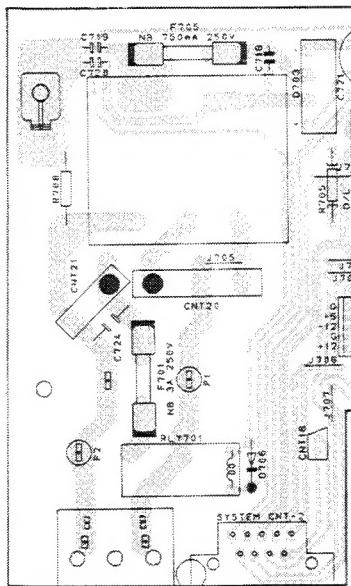
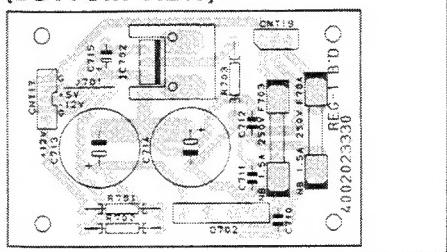


MAIN P.C.BOARD (BOTTOM VIEW)

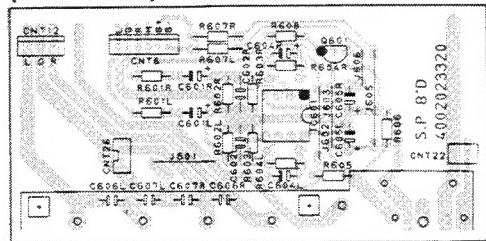
REG-1 P.C.BOARD (TOP VIEW)



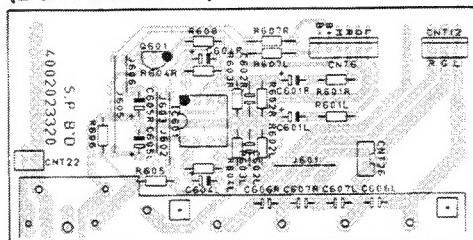
(BOTTOM VIEW)



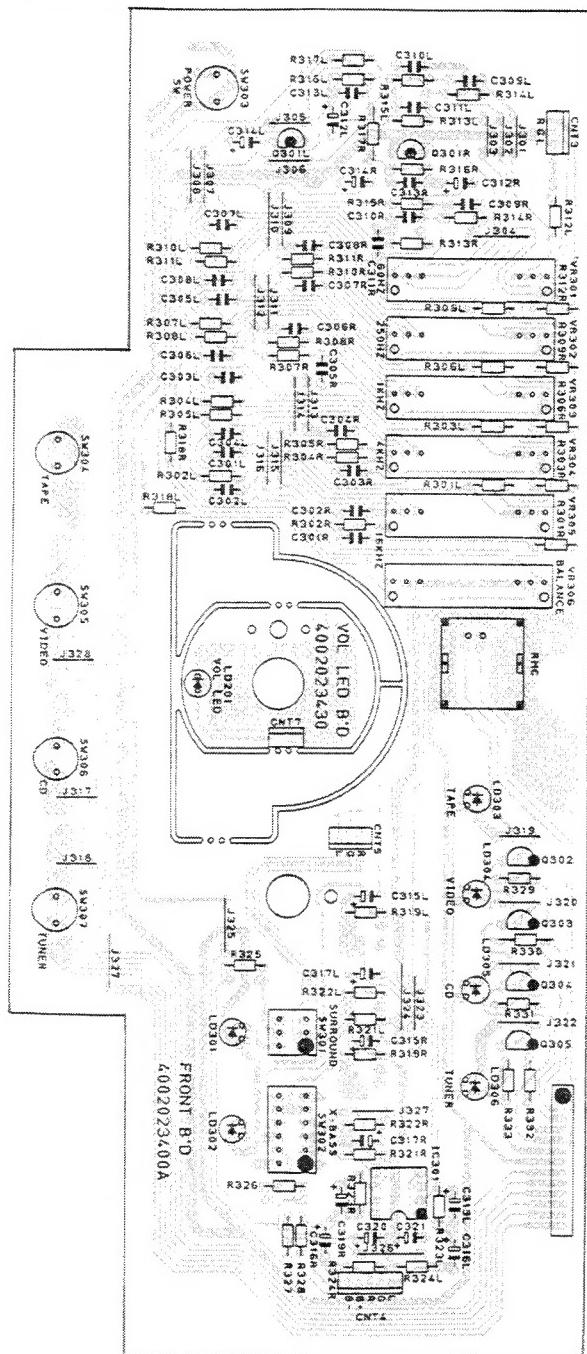
S.P. P.C.BOARD
(TOP VIEW)



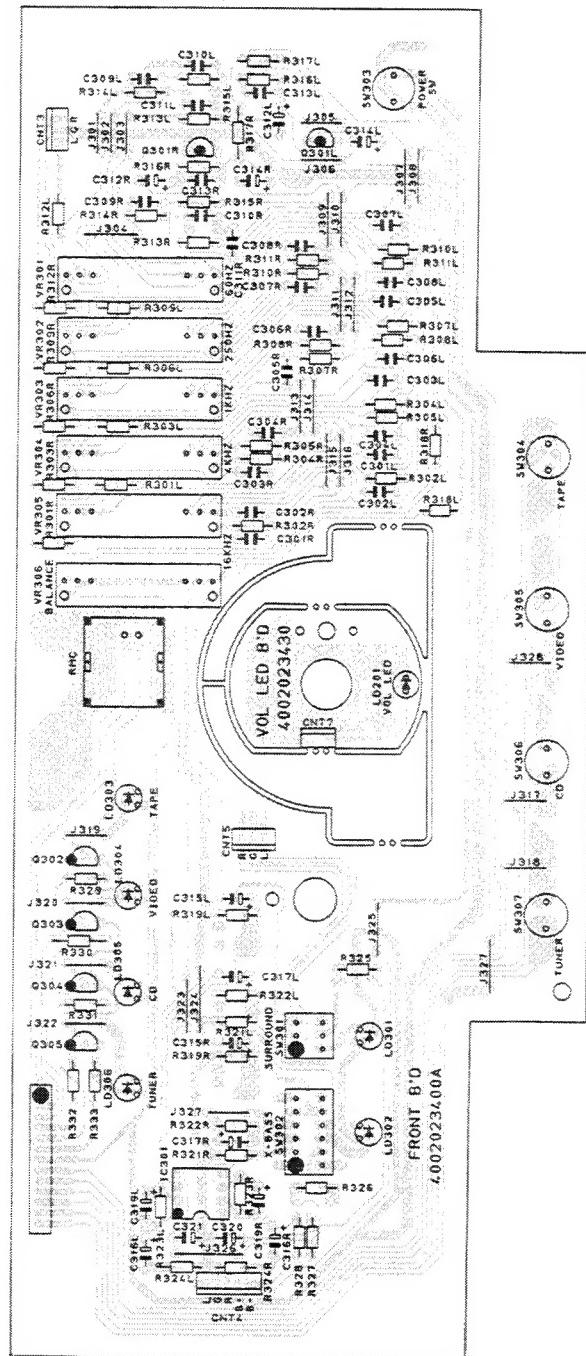
(BOTTOM VIEW)



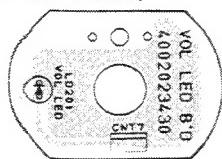
FRONT P.C.BOARD (AMP)
(TOP VIEW)



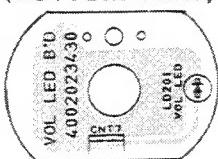
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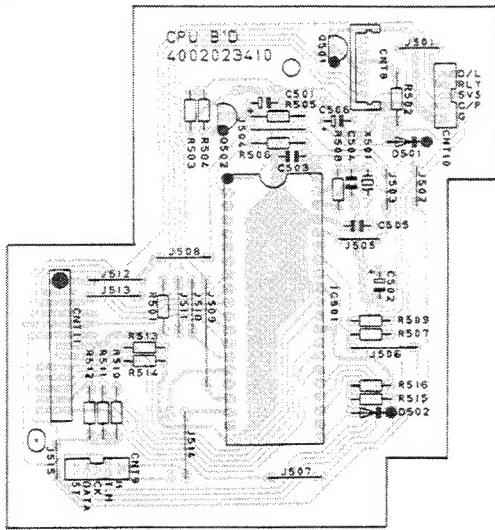
VOL LED P.C.BOARD
(TOP VIEW)



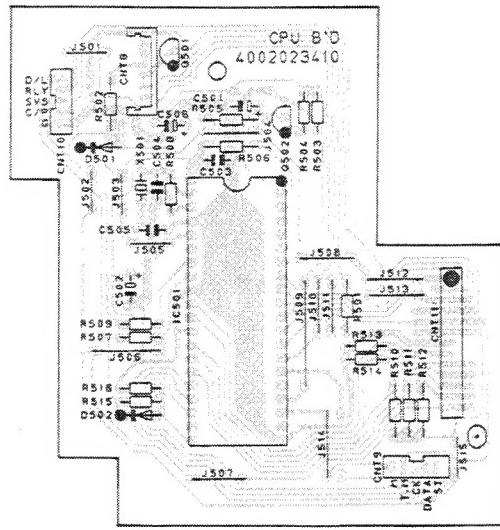
(BOTTOM VIEW)



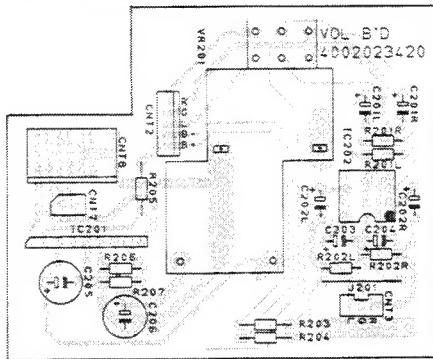
CPU P.C.BOARD
(TOP VIEW)



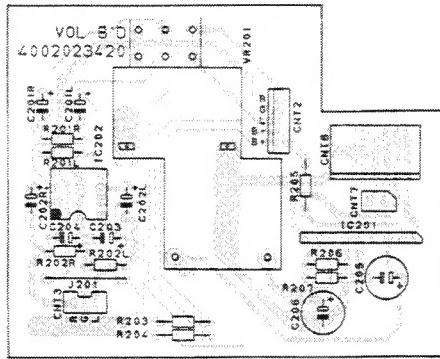
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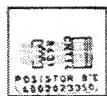
VOL P.C.BOARD
(TOP VIEW)



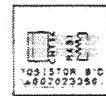
(BOTTOM VIEW)



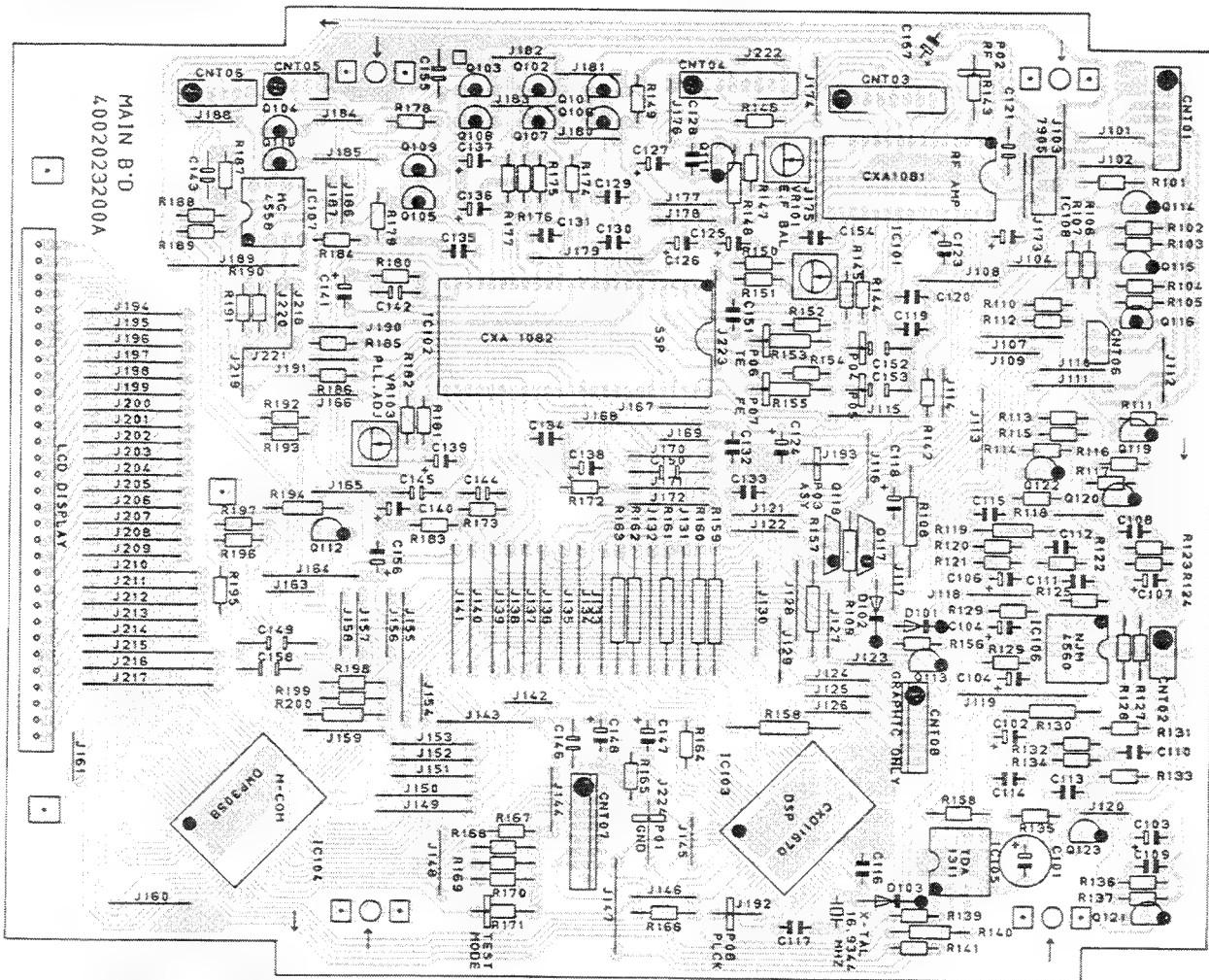
POSISTOR P.C.BOARD
(TOP VIEW)



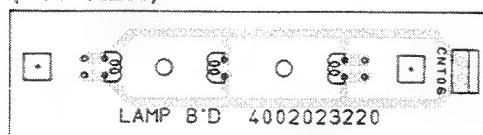
(BOTTOM VIEW)



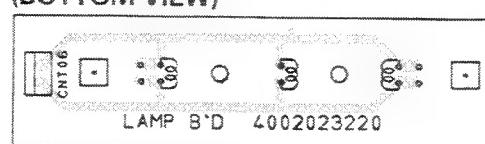
**MAIN P.C.BOARD (CDP)
(TOP VIEW)**



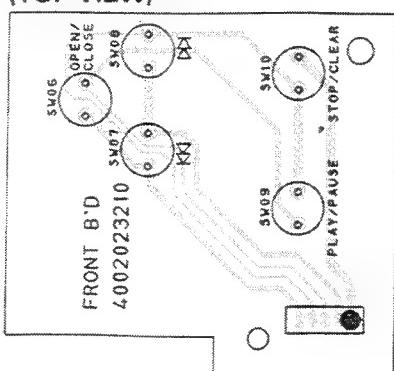
**LAMP P.C.BOARD
(TOP VIEW)**



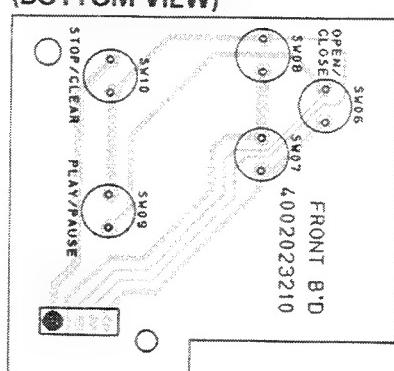
(BOTTOM VIEW)



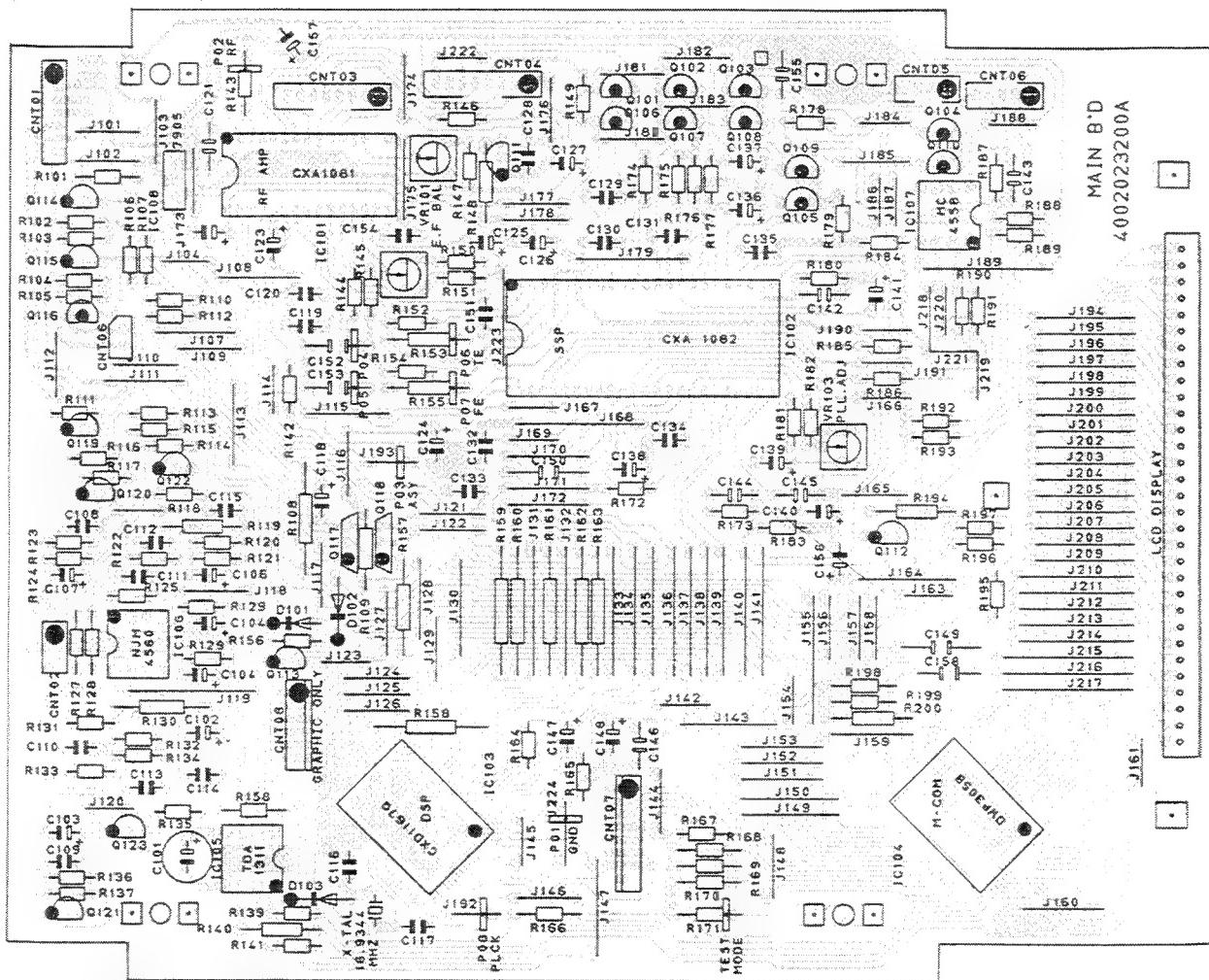
**FRONT P.C.BOARD
(TOP VIEW)**



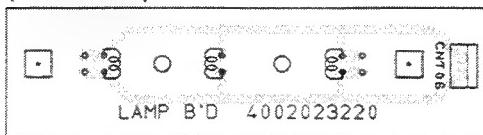
(BOTTOM VIEW)



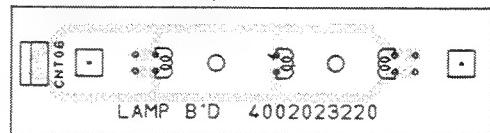
(BOTTOM VIEW)



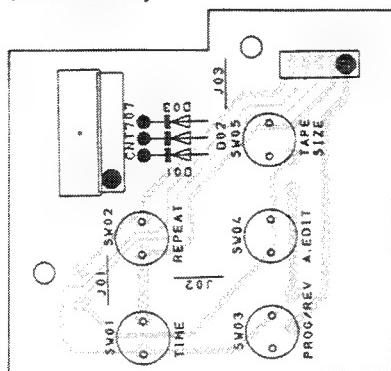
LAMP P.C.BOARD
(TOP VIEW)



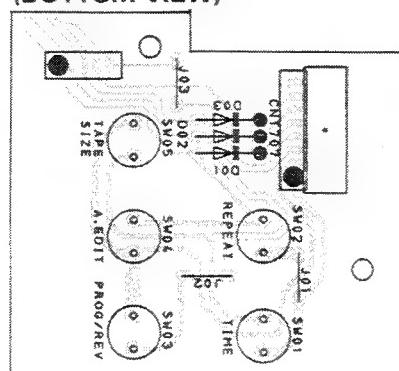
(BOTTOM VIEW)



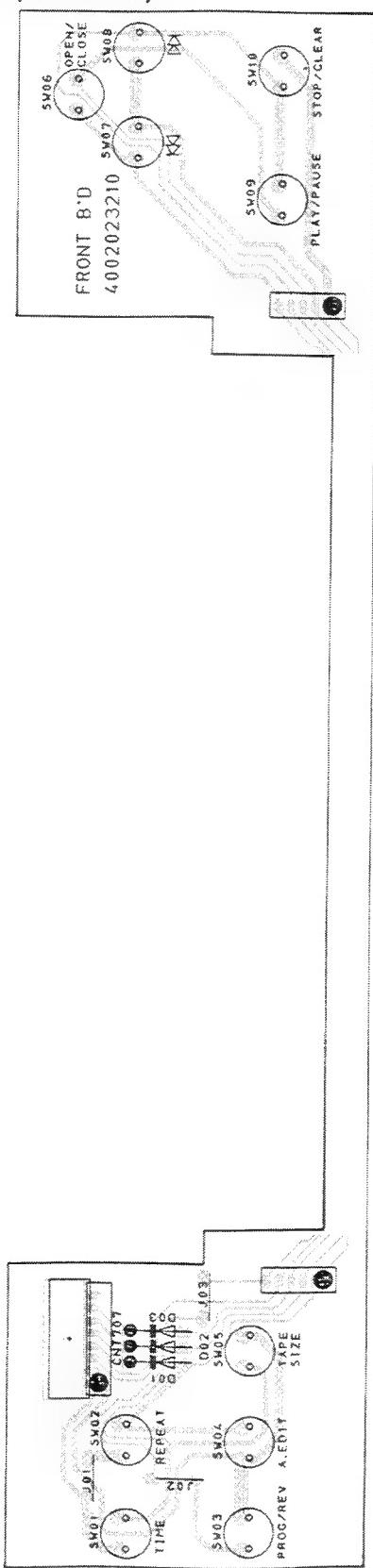
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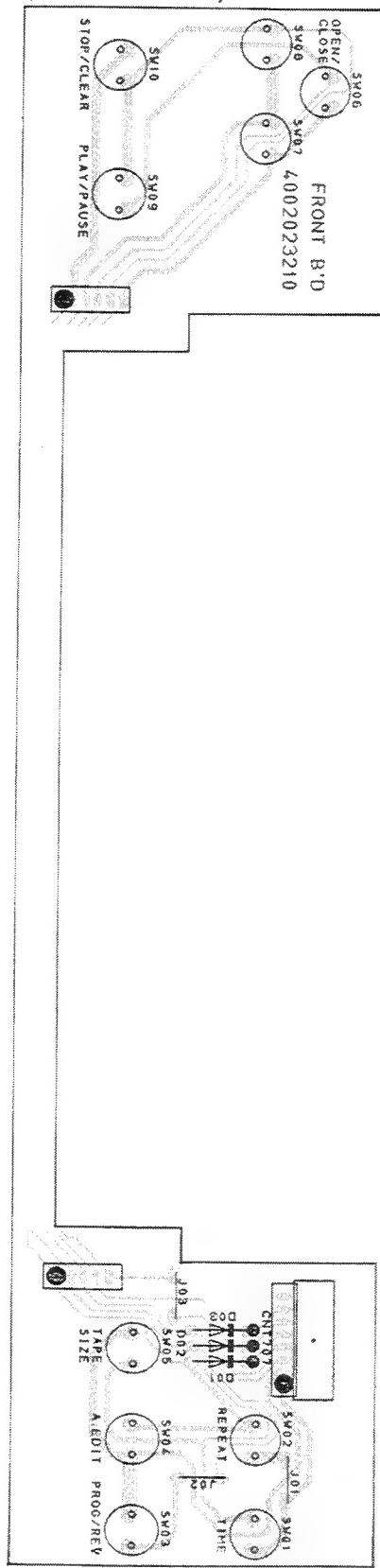
(BOTTOM VIEW)



FRONT P.C.BOARD (TOP VIEW)



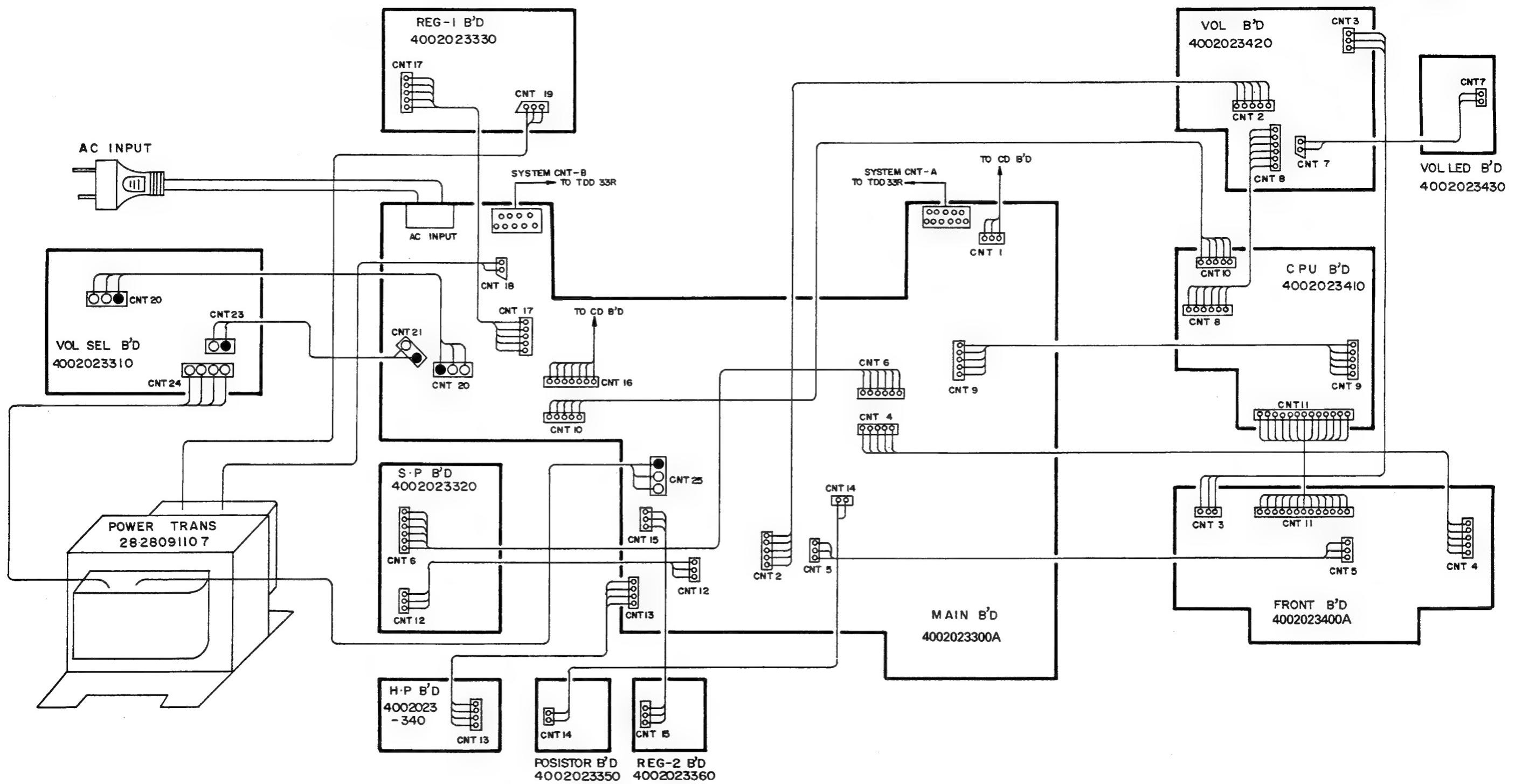
(BOTTOM VIEW)



Note

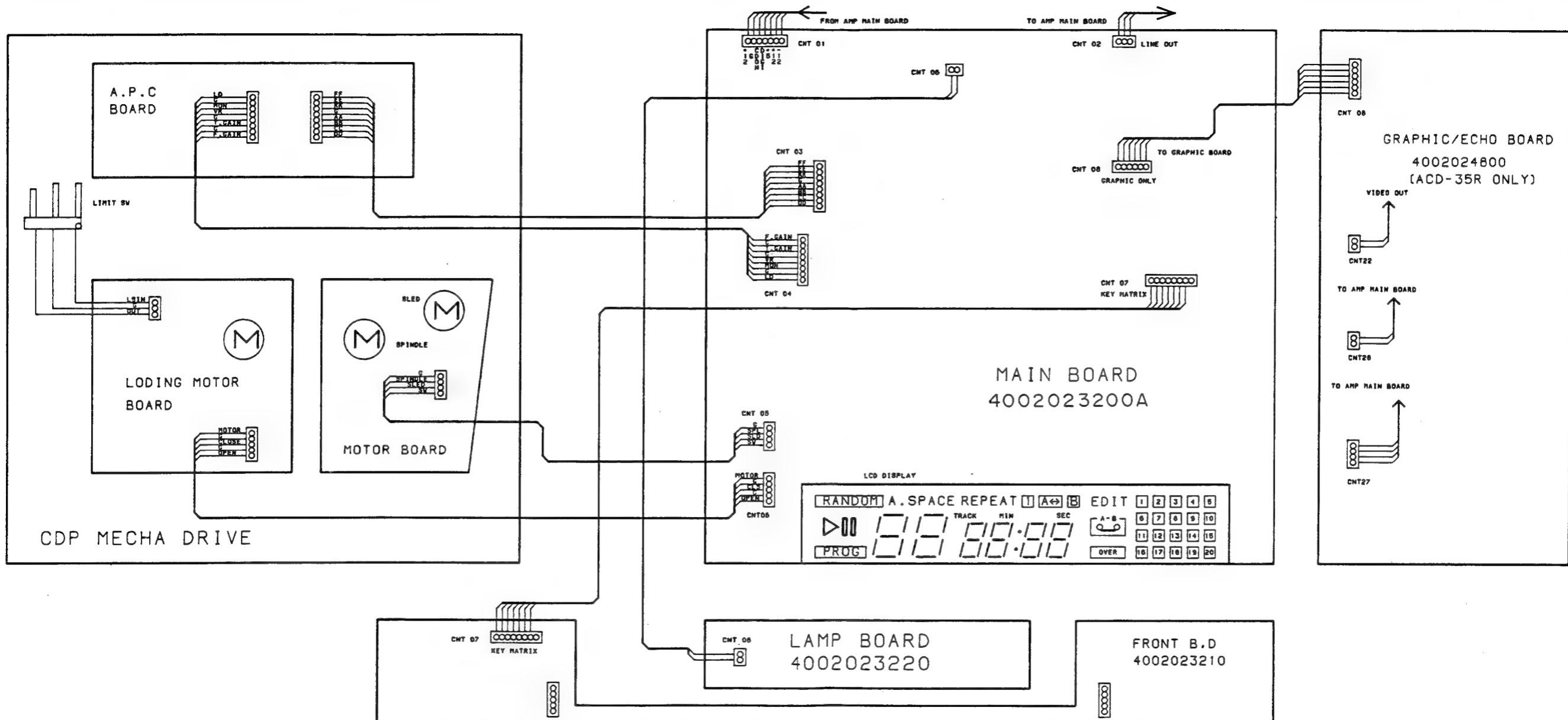
Wiring Diagram(I) ACD-33R(AMP)

Model No. : ACD-33R



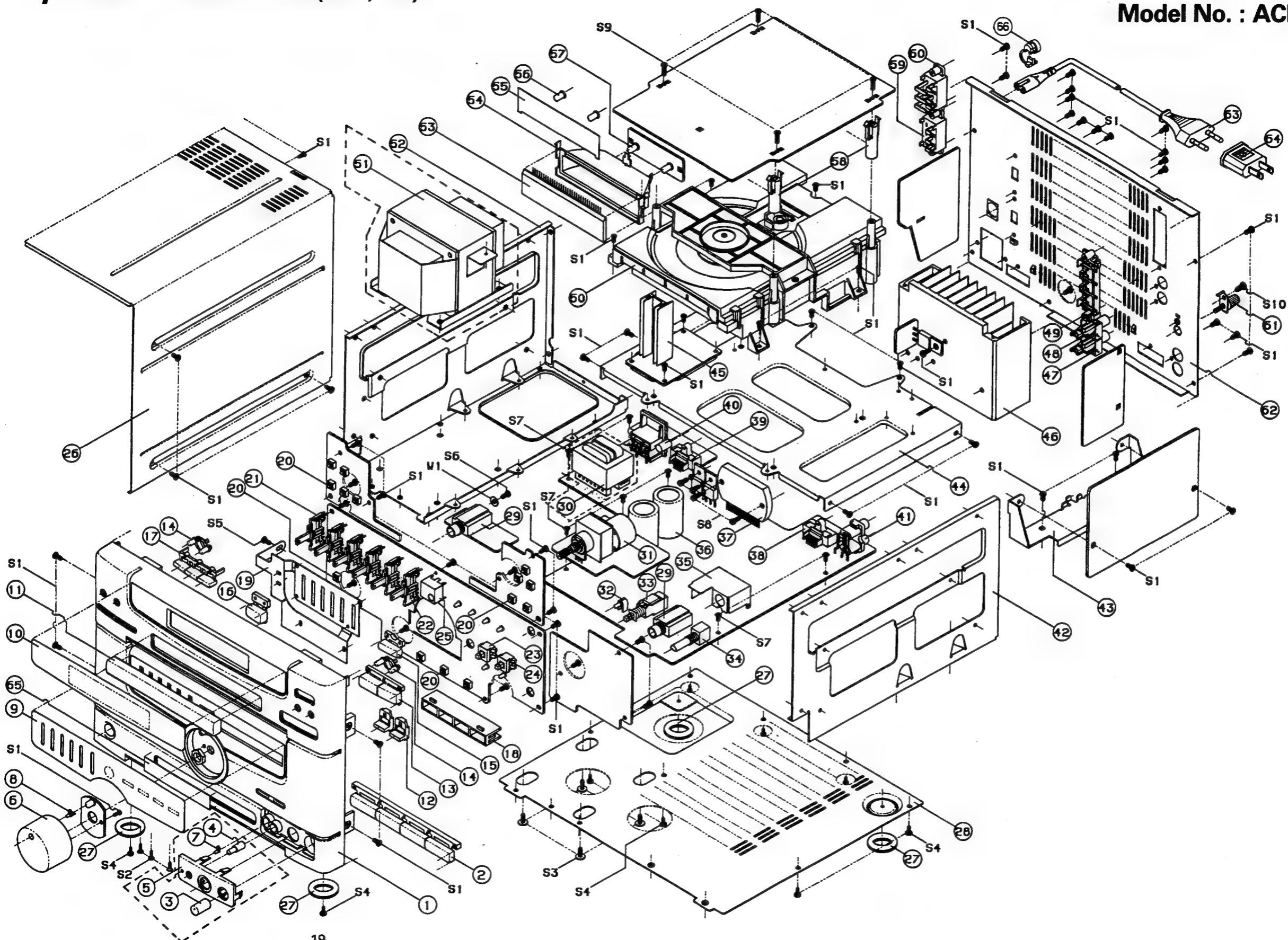
Wiring Diagram(II) ACD-33R(CDP)

Model No. : ACD-33R



Exploded View ACD-33R(AMP,CDP)

Model No. : ACD-33R



Electrical Parts List P-33R(AMP)

PRODUCT SAFETY NOTICE: If you replace any of these components, Carefully read the product safety notice of this manual. Don't degrade the safety of the product through improper servicing. Remark meaning for version, so refer to power requirement of Specifications in this manual.

Resistors & Capacitors tolerance; D : ($\pm 0.5\%$), J : ($\pm 5\%$), K : ($\pm 10\%$), M : ($\pm 20\%$), Z : (+80%, -20%).

Ref.No	Part No.	Description	Remark
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Main P. C. Board

Capacitors

C101L/R-C108L/R	3519101935	Ceramic	100pF	50V	J	D
C109L/R	347922071	Electric SA	22μF	50V	M	
C110	3479210971	Electric SA	1μF	50V	M	
C111L/R	3479247971	Electric SA	4.7μF	50V	M	
C112L/R	3479247971	Electric SA	4.7μF	50V	M	
C113L/R	3519101935	Ceramic	100pF	50V	J	
C115L/R	347922071	Electric SA	22μF	50V	M	
C116L/R	3479247971	Electric SA	4.7μF	50V	M	
C117L/R	3679332120	Mylar	0.0033μF	100V	J	
C118L/R	3479210121	Electric SA	100μF	10V	M	
C119/C120	3479247971	Electric SA	4.7μF	50V	M	DOM.
C121L/R	3479247971	Electric SA	4.7μF	50V	M	
C122L/R	3479247971	Electric SA	4.7μF	50V	M	
C123L/R	3479222071	Electric SA	22μF	50V	M	
C124	3479247971	Electric SA	4.7μF	50V	M	DOM.
C125	3519101935	Ceramic	100pF	50V	J	DOM.
C126	3519221935	Ceramic	220pF	50V	J	DOM.
C128/C129	3479247971	Electric SA	4.7μF	50V	M	DOM.
C130/C131	3479222071	Electric SA	22μF	50V	M	DOM.
C132	3479222071	Electric SA	22μF	50V	M	
C135	3679683120	Mylar	0.068μF	100V	J	DOM.
C137-C140	3479222071	Electric SA	22μF	50V	M	DOM.
C141	3679273071	Mylar	0.027μF	100V	J	DOM.
C401L/R	3579471130	Ceramic	470pF	50V	J	DOM.
C402L/R	3479247971	Electric SA	4.7μF	50V	M	
C403L/R	3579151130	Ceramic	150pF	50V	J	
C404L/R	3479247041	Electric SA	47μF	25V	M	
C405L/R	3479222071	Electric SA	22μF	50V	M	
C406L/R	3579509030	Ceramic	5pF	50V	J	
C407	3579103130	Ceramic	0.01μF	500V	J	
C408	3479222071	Electric SA	22μF	50V	M	
C409	3479247071	Electric SA	47μF	50V	M	
C410	3479210071	Electric SA	10μF	50V	M	
C411L/R/C412	3479247971	Electric SA	4.7μF	50V	M	
C413L/R	3679473120	Mylar	0.047μF	100V	J	
C414	3479222071	Electric SA	22μF	50V	M	
C415	3479247071	Electric SA	47μF	50V	M	
C701-C703	3509103450	Ceramic	0.01μF	500V	J	D
C704/C705	3509103450	Ceramic	0.01μF	500V	J	
C706/C707	3419233294	Electric SA	3300μF	40V	M	
C708	3409222161	Electric SA	220μF	35V	M	
C709	3479210071	Electric SA	10μF	50V	M	
C716/C717	3479210071	Electric SA	10μF	50V	M	
C719/C720	3579103530	Ceramic	0.01μF	50V	J	D
C721	3409247141	Electric SA	470μF	25V	M	

Ref.No	Part No.	Description	Remark
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Ref.No	Part No.	Description</th

Ref.No	Part No.	Description				Remark
C313L/R	3579470130	Ceramic	47pF	50V	J	
C314L/R	3479247971	Electric SA	4.7μF	50V	M	
C315L/R	3479210071	Electric SA	10μF	50V	M	
C316L/R	3679563120	Mylar	0.056μF	100V	J	
C317L/R	3479210071	Electric SA	10μF	50V	M	
C318L/R	3479222971	Electric SA	2.2μF	50V	M	
C319L/R	3479247971	Electric SA	4.7μF	50V	M	
C320/C321	3479222071	Electric SA	22μF	50V	M	
Connectors						
CNT3	436203183132	Ass'y 3P 180mm to Volume Board				
CNT4	436205243132	Ass'y 5P 240mm to Main Board				
CNT5	436203163132	Ass'y 3P 160mm to Main Board				
CNT11	436113082532	Ass'y 13p 80mm to CPU Board				
Diodes						
LD301 - LD306	2308220326	LED, SLV56MC				
IC's						
IC301	2168206104	KIA459P, Dual OP Amplifier				
RMC	2408000131	KRM34LI, Remocon Receiver				
Resistors						
R301L/R	3069682970	6.8kΩ				
R302L/R	3069682970	6.8kΩ				
R303L/R	3069472970	4.7kΩ				
R304L/R	3069472970	4.7kΩ				
R305L/R	3069152970	1.5kΩ				
R306L/R	3069472970	4.7kΩ				
R307L/R	3069682970	6.8kΩ				
R308L/R	3069102970	1kΩ				
R309L/R	3069822970	8.2kΩ				
R310L/R	3069822970	8.2kΩ				
R311L/R	3069472970	4.7kΩ				
R312L/R	3069822970	8.2kΩ				
R313L/R	3069822970	8.2kΩ				
R314L/R	3069394970	390kΩ				
R315L/R	3069103970	10kΩ				
R316L/R	3069474970	470kΩ				
R317L/R	3069682970	6.8kΩ				
R318L/R	3069102970	1kΩ				
R319L/R	3069104970	100kΩ				
R320L/R	3069564970	560kΩ				
R321L/R	3069622970	6.2kΩ				
R322L/R	3069562970	5.6kΩ				
R323L/R	3069562970	5.6kΩ				
R324L/R	3069104970	100kΩ				
R325/R326	3069681970	680Ω				
R310/R328	3069820970	82Ω				
R329 - R332	3069103970	10kΩ				
R333	3069151970	150Ω				
Transistors						
Q301L/R	2008609107	MPS9633C NPN				
Q302 - Q305	2208606104	KTC1815Y NPN				
CPU P.C.Board						
Capacitors						
C501	3479210971	Electric SA	1μF	50V	M	
C502	3409222211	Electric SA	2200μF	6.3V	M	
C503	3579103130	Ceramic	0.01μF	50V	J	
C504/C505	3529220210	Ceramic CH	22pF	50V	J	
C506	3479210071	Electric SA	10μF	50V	M	

Ref.No	Part No.	Description				Remark
Connectors						
CNT8	4428560060	Plug 6P				
CNT9	4428516410	Plug 5P				
CNT10	4428516410	Plug 5P				
Diodes						
D501/D502	2058306101	1N4148				
IC's						
IC501	2138309145	CPU DWP112				
X - 501	3938101830	Filter, Resonate 4MHz				
Resistors						
R501	3069103970	10kΩ				
R502	3069331970	330Ω				
R503	3069103970	10kΩ				
R504	3069102970	1kΩ				
R505/R506	3069104970	100kΩ				
R507	3069103970	10kΩ				
R508	3069335970	3.3MΩ				
R509	3069104970	100kΩ				
R510 - R512	3069103970	10kΩ				
R513/R514	3069104970	100kΩ				
R515	3069223970	22kΩ				
R516	3069224970	220kΩ				
Transistors						
Q501/Q502	2208606104	KTC1815Y NPN				
Volume P.C.Board						
Capacitors						
C201L/R	3479247971	Electric SA	4.7μF	50V	M	
C202L/R	3479247971	Electric SA	4.7μF	50V	M	
C203/C204	3479222071	Electric SA	22μF	50V	M	
C205/C206	3479210131	Electric SA	100μF	16V	M	
Connectors						
CNT2	436205143132	Ass'y 5P 140mm to Main Board				
CNT3	4428516210	Plug 3P				
CNT7	4428508210	Plug 2P				
CNT8	4428550060	Plug 6P				
IC's						
IC201	2168007204	TA7291S, Motor Control				
IC202	2168206104	KIA4559P, Dual OP Amplifier				
Resistors						
R201L/R	3069104970	100kΩ				
R202L/R	3069104970	100kΩ				
R203/R204	3069820970	82Ω				
R205	3069470970	47Ω				
R206	3069822970	8.2kΩ				
R207	3069472970	4.7kΩ				
Volume LED P.C.Board						
Connector						
CNT7	4358102184	Ass'y 2P 180mm to Volume Board				
Diode						
LD201	2308220109	LED, SLURC3				
Volume Selector P.C.Board						
Connectors						

Ref.No	Part No.	Description			Remark
CNT20	4358903100	Ass'y 3P 100mm to Main Board			DOM. B
CNT23	4358902141	Ass'y 2P 140mm to Main Board			DOM. B
CNT24	4428525800	Plug 4P AC			DOM. B
Fuse					
F702	4358902141	NB 1.5A 250V			DOM. B
Speaker Selector P.C.Board					
Capacitors					
C601L/R	3479247971	Electric SA	4.7 μ F	50V	M
C602L/R	3519101935	Ceramic	100pF	50V	J
C604L/R	3479247971	Electric SA	4.7 μ F	50V	M
C605L/R	3479222071	Electric SA	22 μ F	50V	M
C606L/R	3579222530	Ceramic	220pF	50V	J
C607L/R	3579222530	Ceramic	220pF	50V	J
Connectors					
C606	4428516510	Plug 6P			
C612	4428517610	Plug 3P			
IC					
IC601	2168206104	KIA4559P, Dual OP Amplifier			
Resistors					
R601L/R	3069102970	1k Ω			
R602L/R	3069104970	100k Ω			
R603L/R	3069271970	270 Ω			
R604L/R	3069102970	1k Ω			
R605	3069472970	4.7k Ω			
R606	3069104970	100k Ω			
R607L/R	3069820970	82 Ω			
Transistor					
O601	2008206104	KTD1302 NPN			
Regulator – 1 P.C.Board					
Capacitors					
C711/C712	3579103530	Ceramic	0.01 μ F	50V	J
C713	3409222261	Electric SA	2200 μ F	35V	M
C714	3409210261	Electric SA	1000 μ F	35V	M
C715	3479210031	Electric SA	10 μ F	50V	M
Connectors					
CNT17	4428516410	Plug 5P			
CNT19	4428508210	Plug 3P			
Diode					
D702	2058100148	PBP 152			
Fuses					
F703	5508202230	NB 1.5A 250V			DOM. A,B
(F703)	5508302135	T 1.25A 250V			E,F
F704	5508302135	NB 1.5A 250V			DOM. A,B
(F704)	5508302135	T 1.25A 250V			E,F
IC					
IC702	2168609102	GD7912, Regulator			
Resistors					
R701 - R703	3039479472	M.O., 4.7 Ω 1W			
Regulator – 2 P.C.Board					
Connector					

Ref.No	Part No.	Description			Remark
CNT15	436203203132	Ass'y 3P 200mm to Main Board			
IC					
IC704	2168601104	GD7812, Regulator			
Headphone P.C.Board					
Capacitors					
C416L/R	3679561530	Ceramic	560pF	50V	J D
Connector					
CNT13	436204083121	Ass'y 4P 80mm to Main Board			
Resistors					
R435L/R	3039271472	M.O., 270 Ω 1W			
Posistor P.C.Board					
Connector					
CNT14	436202123132	Ass'y 2P 120mm Main Board			
Resistor					
R431	4002023350	Posistor			
Remocon P.C.Board					
Capacitors					
C01	3409247022	Electric SA	47 μ F	10V	M
C02/C03	3509101130	Ceramic	100pF	50V	J
Diodes					
D01	2308060105	LED, KLR226			
D02	2408001100	EL420KEC			
IC					
IC01	2138013116	uPD 6121G – 002			
Crystal					
X - 01	3938001001	Ceramic, Resonator CSB455E			
Resistors					
R01	3069229970	2.2 Ω			
R02 - R05	3069224970	220k Ω			
R06	3069102970	1k Ω			
R07	3069224970	220k Ω			
Main P.C.Board					
Others					
Trans	2828095307	Trans Power			A
.	2828096301	Trans Power			B
.	2828094207	Trans Power			E
.	2828092407	Trans Power			F
.	2828092207	Trans Power			G
Stand-by Trans	2828095607	Trans Stand – by			A
.	2828096401	Trans Stand – by			B
.	2828094307	Trans Stand – by			E
.	2828092307	Trans Stand – by			F
.	2828092107	Trans Stand – by			G
.	2828091007	Trans Stand – by			DOM.

Electrical Parts List ACD-33R(CDP)

RODUCT SAFETY NOTICE : If you replace any of these component, carafuly read the roduct safety notice of this manual. Don't degrade the safety of the product throug improper servicing. Remark meaning for version, so refer to power equirement of Specification in this manual. Resistors & Capacitors tolerance, : $(\pm 0.5\%)$, J : $(\pm 5\%)$, K : $(\pm 10\%)$, M : $(\pm 20\%)$, Z : $(+80\%, -20\%)$.

Ref.No	Part No.	Description			Remark			
Main P.C.Board								
Capacitors								
C101	3079347121	Electric SA	470 μ F	10V	M			
C102 - C107	3479247041	Electric SA	47 μ F	25V	M			
C108 - 109	3679392120	Mylar	0.0039 μ F	100V	J			
C110 - C111	3679103120	Mylar	0.01 μ F	100V	J			
C112 - C113	3679152120	Mylar	0.0015 μ F	100V	J			
C114 - C115	3679183120	Mylar	0.018 μ F	100V	J			
C116 - C117	3579200210	Ceramic	20pF	50V	J			
C118	3479210071	Electric SA	10 μ F	50V	M			
C119	3679333120	Mylar	0.033 μ F	100V	J			
C120	3679103120	Mylar	0.01 μ F	100V	J			
C121	3679103120	Ceramic	0.01 μ F	50V	J			
C122	3479247041	Electric SA	47 μ F	25V	M			
C123	3479247971	Electric SA	0.47 μ F	50V	M			
C125 - C127	3479247041	Electric SA	47 μ F	25V	M			
C128	3679222120	Mylar	0.0022 μ F	100V	J			
C129	3679104120	Mylar	0.1 μ F	100V	J			
C130		Not used !						
C131	3679104120	Mylar	0.1 μ F	100V	J			
C132	3679333120	Mylar	0.033 μ F	100V	J			
C133	3679103120	Mylar	0.01 μ F	100V	J			
C134	3679472120	Mylar	0.0047 μ F	100V	J			
C135	3679153120	Mylar	0.015 μ F	100V	J			
C136	3479222071	Electric SA	22 μ F	50V	M			
C137	3479233971	Electric SA	3.3 μ F	50V	M			
C138	3479247971	Electric SA	4.7 μ F	50V	M			
C139 - C140	3479247041	Electric SA	47 μ F	25V	M			
C141	3479233971	Electric SA	3.3 μ F	50V	M			
C142	3519472935	Ceramic	0.0047 μ F	50V	J			
C143	3519471935	Ceramic	470pF	50V	J			
C144	3519103935	Ceramic	0.01 μ F	50V	J			
C145 - C146	3519223935	Ceramic	0.022 μ F	50V	J			
C147	3479247971	Electric SA	0.47 μ F	50V	M			
C148	3479247041	Electric SA	47 μ F	25V	M			
C149	3519103935	Ceramic	0.01 μ F	50V	J			
C150	3519102935	Ceramic	0.001 μ F	50V	J			
C151	3679222120	Mylar	0.0022 μ F	100V	J			
C152	3519561935	Ceramic	560pF	50V	J			
C153	3519472935	Ceramic	0.0047 μ F	50V	J			
C154	3679333120	Mylar	0.033 μ F	100V	J			
C155	3519101935	Ceramic	100pF	50V	J			
C156	3479210071	Electric SA	10 μ F	50V	M			
C157	3409347139	Electric SA	470 μ F	16V	M			
C158	3519223935	Ceramic	0.022 μ F	50V	J			
Connectors								
CNT01	4428525570	Plug 7P						
CNT02	4428525530	Plug 3P						
CNT03	4428516710	Plug 8P						
CNT04	4428516710	Plug 8P						
CNT05	4428516310	Plug 4P						
CNT06	4428516410	Plug 5P						
CNT07	432608142132	Ass'y 8P 420mm to Front Board Not used !						
CNT08								

Ref.No	Part No.	Description			Remark
CNT09	4428508210	Plug 2P			
Diodes					
D101 - D103	2058306101	1N4148			
D104	2258106100	1N4002			
ICs					
IC101	2138022111	CXA1081, RF AMP			
IC102	2138022112	CXA1082, SSP			
IC103	2138022110	CXD1167Q, DSP			
IC104	2138322130	DWP305B, MICOM			
IC105	2138000167	TDA1311, DAC			
IC106	2168220103	NJM4560, OP AMP			
IC107	2168000114	MC4558, OP AMP			
IC108	2168600105	MC7905, Regulator			
Resistors					
R101	3069472970	4.7k Ω			
R102	3069332970	3.3k Ω			
R103	3069103970	10k Ω			
R104 - R105	3069102970	1k Ω			
R106 - R107	3069103970	10k Ω			
R108	3069332970	3.3k Ω			
R109	3069103970	10k Ω			
R110	3069101970	100k Ω			
R111 - R112	3069103970	10k Ω			
R113	3069104970	100k Ω			
R114	3069682970	6.8k Ω			
R115	3069104970	100k Ω			
R116 - R117	3069103970	10k Ω			
R118	3069821970	820 Ω			
R119	3069392970	3.9k Ω			
R120	3069471970	470k Ω			
R121	3069104970	100k Ω			
R122	3069512970	5.1k Ω			
R123	3069102970	1k Ω			
R124	3069104970	100k Ω			
R125	3069512970	5.1k Ω			
R127	3069103970	10k Ω			
R128	3069682970	6.8k Ω			
R129/R130	3069272970	2.7k Ω			
R131	3069512970	5.1k Ω			
R132	3069471970	470 Ω			
R133	3069512970	5.1k Ω			
R134	3069392970	3.9k Ω			
R135	3069821970	820 Ω			
R136	3069104970	100k Ω			
R137	3069102970	1k Ω			
R139 - R141	3069561970	560 Ω			
R142	3069104970	100k Ω			
R143	3069243970	24k Ω			
R144/R145	3069472970	4.7k Ω			
R146	3069101970	100 Ω			
R147	3069223970	22k Ω			
R148	3069220970	22 Ω			
R149	3069101970	100 Ω			
R150 - R152	3069103970	10k Ω			
R153/R154	3069123970	12k Ω			

Ref.No	Part No.	Description	Remark
R155	3069103970	10kΩ	
R156	3069223970	22kΩ	
R157	3069103970	10kΩ	
R158/R159	3069473970	47kΩ	
R160	3069103970	10kΩ	
R161	3069104970	100kΩ	
R162	3069103970	10kΩ	
R163	3069102970	1kΩ	
R164	3069203970	20kΩ	
R165	3069105970	1MΩ	
R166	3069561970	560Ω	
R167 – R171	3069333970	33kΩ	
R172	3069104970	100kΩ	
R173	3069102970	1kΩ	
R174	3069104970	100kΩ	
R175/R176	3069823970	82kΩ	
R177	3069153970	15kΩ	
R178	3069682970	6.8kΩ	
R179	3069124970	120kΩ	
R180	3069474970	470kΩ	
R181	3069124970	120kΩ	
R182	3069362970	3.6kΩ	
R183	3069223970	22kΩ	
R184	3069822970	8.2kΩ	
R185	3069104970	100kΩ	
R186	3069473970	47kΩ	
R187 – R189	3069104970	100kΩ	
R190	3069472970	4.7kΩ	
R191	3069104970	100kΩ	
R192/R193	3069333970	33kΩ	
R194 – R196	3069153970	15kΩ	
R197	3069471970	470Ω	
R198 – R199	3069101970	100Ω	
R200	3069333970	33kΩ	
R201	3069104970	100kΩ	
R202	3069102970	1kΩ	
R203	3069151970	150kΩ	

Variable Resistors – Semifixed

VR101	3248020343	Semi 20kΩ(B)	
VR102	3248020343	Semi 50kΩ(B)	
VR103	3248010243	Semi 1kΩ(B)	

Transistors

Q101 – Q105	2208606114	KMPS A06 NPN	
Q106 – QQ110	2208206113	KMPS A56 PNP	
Q111	2208206105	KTA1166Y PNP	
Q112 – Q115	2208606112	KTD1302 NPN	
Q116	2208606114	KMPS A06 NPN	
Q117 – Q118	2208622109	DTC144E NPN	
Q119	2208206105	KTA1166Y PNP	
Q120 – Q123	2208606112	KTD1302 NPN	

Others

LCD	2338009918	LCD, SLC – 60202RS	
X – TAL	3938101500	X – Tal 16.9344 MHz	
L101	2648647984	Coil, 4.7uH	

Front P. C.Board

Connector

CNT07	4428540060	Plug 8P	
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Diodes

D01 – D03	2058306101	1N4148	
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Ref.No	Part No.	Description	Remark
Lamp P.C. Board			
Connector			
CNT09	436102182131	Ass'y 2P 180mm From Main Board	
Lamp	2528203810	Lamp, 12V	

Mechanical Parts List ACD-33R

No.	Description	Part No.	Q'ty	Remark
1	Panel Front, Black	048501024011	1	Dom.
1	Panel Front, Black	048501024012	1	G
1	Panel Front, Black	048501024013	1	A,B,E,F
1	Panel Front, Silver	048501024021	1	Dom.
2	Button Tact 4Key, Black	048543043911	1	Dom.
2	Button Tact 4Key, Black	048543043912	1	A,B,E,G,F
2	Button Tact 4Key, Silver	048543043921	1	Dom.
3	Knob Rotary, MIC, Black	048545097411	1	Dom.,G
3	Knob Rotary, MIC, Silver	048545097421	1	Dom.
4	Button Push, Voice, Black	8545097310	1	Dom.,G
4	Button Push, Voice, Silver	8545097320	1	Dom.
5	Cover MIC, Black	048565002011	1	Dom.
5	Cover MIC, Black	048565002012	1	G
5	Cover MIC, Silver	048565002021	1	Dom.
5	Cover Front, Black	048565002111	1	A,B,E,F
6	Knob Rotary, Black	048543044011	1	Dom.,A,B,E,G,F
6	Knob Rotary, Silver	048543044021	1	Dom.
7	Indicator Voice	8555039210	1	Dom.,G
8	Indicator Volume	8555039110	1	
9	Inlay Amplifier, Black	048533007611	1	Dom.
9	Inlay Amplifier, Black	048533007612	1	A,B,E,G,F
9	Inlay Amplifier, Silver	048533007613	1	Dom.
10	Inply CDP, Black	048535036011	1	Dom.,A,B,F,G
10	Inply CDP, Silver	048535036013	1	Dom.
11	Door Tray, Black	048563005911	1	Dom.,A,B,F,G
11	Door Tray, Silver	048563005921	1	Dom.
12	Button Push, Surround	8545097510	2	
13	Button Tact, Play/Stop, Black	048543044111	1	Dom.,A,B,E,G,F
13	Button Tact, Play/Stop, Silver	048543044121	1	Dom.
14	Button Tact, 2Key, Black	8545096610	2	Dom.,A,B,E,G,F
14	Button Tact, 2Key, Silver	8545096620	2	Dom.
15	Button Tact, Open/close, Black	048545097611	1	Dom.,A,B,E,G,F
15	Button Tact, Open/close, Silver	048545097621	1	Dom.
16	Button Tact, Power, Black	048545097211	1	Dom.,A,B,E,G,F
16	Button Tact, Power, Silver	048545097221	1	Dom.
17	Button Tact, 3Key, Black	8545096710	1	Dom.,A,B,E,G,F
17	Button Tact, 3Key, Silver	8545096720	1	Dom.
18	Holder LED, White	6513005510	1	
19	Shield Fence, EQ	6163111710	1	
20	Switch, Tact	4658003710	15	
21	Volume Slide(EQ)100KBx2	3238410010	5	
22	Volume Slide(Bal)100KW	3238410110	1	
23	Switch Push(2/2)Spea	4628054410	1	
24	Switch Push(2/2)Spea	4628042010	1	
25	Sensor Remote	2408000131	1	
26	Cover Top, Black	046121002121	1	Dom.,A,B,E,G,F
26	Cover Top, Silver	046121002122	1	Dom.
27	Foot Cushion	6715020610	4	
28	Cover Bottom	6122417910	1	
29	Jack MIC, 9P, Black	4438004220	2	Dom.,G
29	Jack MIC, 9P, Black	4438004220	1	A,B,E,F
29	Jack MIC, 9P, Gold	4438005320	2	Dom.
30	Trans Stand - by	2828095607	1	A
30	Trans Stand - by	2828096401	1	B
30	Trans Stand - by	2828094307	1	E
30	Trans Stand - by	2828092307	1	F
30	Trans Stand - by	2828092107	1	G
30	Trans Stand - by	2828091007	1	DOM.
31	Volume Main 50KAx2, Motor	3208063210	1	
32	Spacer LED	6705017910	1	Dom.,G

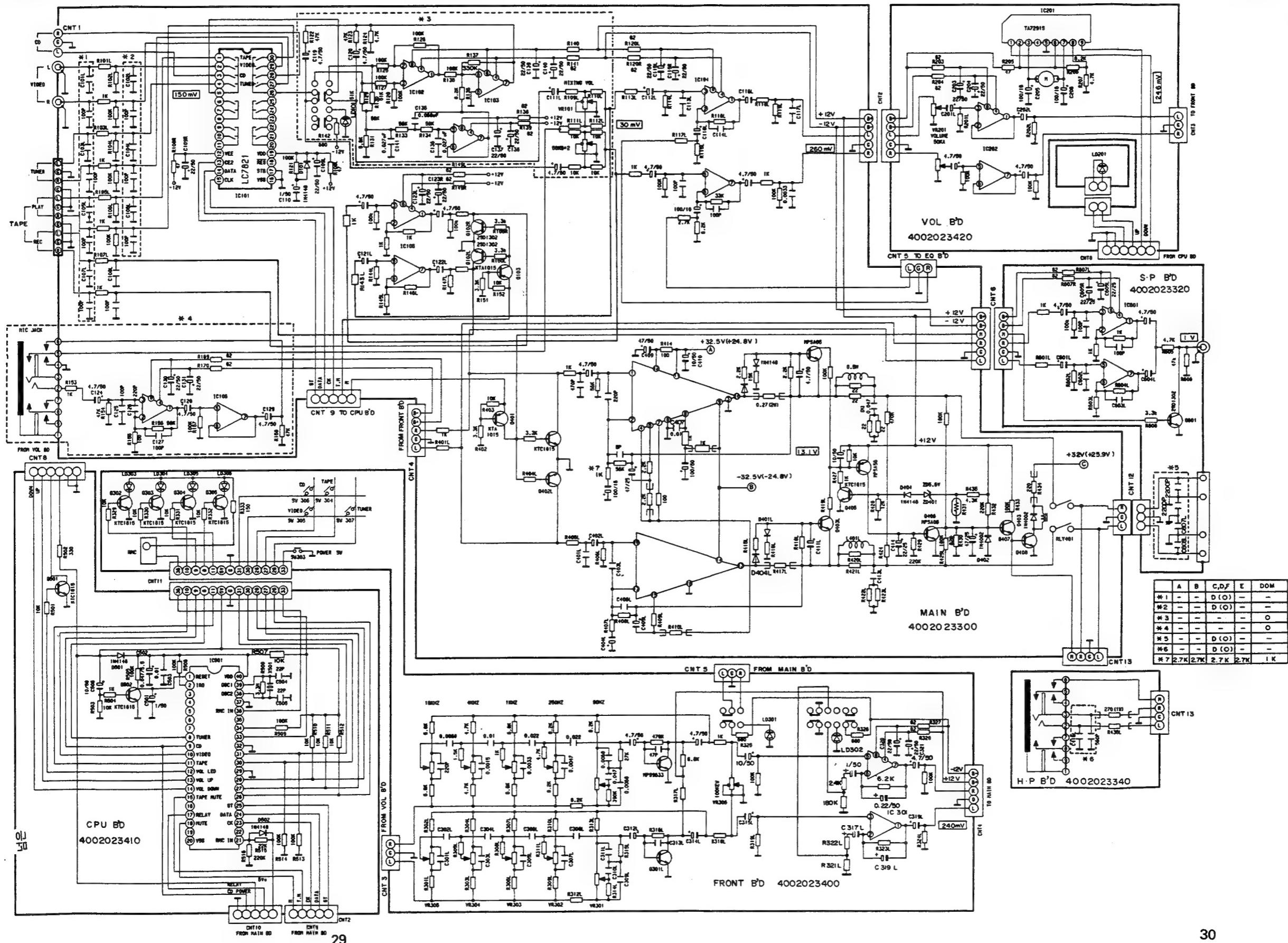
No.	Description	Part No.	Q'ty	Remark
33	Switch, Push(4/2)Spul	4628051010	1	Dom.,G
34	Volume MIC 50KBx2	3208063310	1	Dom.,G
35	Shield Fence, MIC	6165142410	1	Dom.,G
36	Cap Power	3419533294	2	
37	IC Power	2178317124	1	
38	Socket Connector, 11P	4428570110	1	
39	Socket Connector, 9P	4428570090	1	
40	AC Socket	4448003010	1	
41	Jack RCA, 2P	4438105610	1	Dom.,E,G,F
42	Frame Side Right	6122634110	1	
43	Not used !			
44	Frame Main	6122634310	1	
45	Heatsink Regulator TR	7505206220	1	
46	Heatsink Power	7503014010	1	
47	Not used !			
48	Jack RCA 1P, Sub Woofer, Black	4438110010	1	
49	Push Term 4P, Speaker	4408105420	1	Dom.,A,B,E,G,F
50	Mecha CD, ILU - 04A, Black	5728000410	1	Dom.,A,B,E,G,F
50	Mecha CD, ILU - 04AS, Silver	5728000420	1	Dom.
51	Trans Power	2828095307	1	A
51	Trans Power	2828096301	1	B
51	Trans Power	2828094207	1	E
51	Trans Power	2828092407	1	F
51	Trans Power	2828092207	1	G
52	Frame Side Left	6122634210	1	
53	LCD Display	2338009918	1	
54	Holder LCD, White	6513005410	1	
55	Filter LCD, Green	048535036711	1	Dom.
55	Filter LCD, Milk	048535036711	1	A,B,E,F,G
56	Cap color, Lamp	4828000210	2	Dom.
56	Cap color, Lamp, Blue	4828000310	2	A,B,E,F,G
57	Lamp, 12V, 100mA	2528203810	2	
58	Spacer PCB	6705018010	4	
59	Switch Voltage, 1C	4618006610	1	Dom.,B
60	Switch Voltage, 2C	4618006510	1	Dom.,B
61	Term, Ground	4408104910	1	
62	Chassis Back, Black	046102033311	1	Dom.
62	Chassis Back, Silver	046102033312	1	Dom.
62	Chassis Back, Black	046102033331	1	G
62	Chassis Back, Black	046102033334	1	E
62	Chassis Back, Black	046102033335	1	F
62	Chassis Back, Black	046102033341	1	A
62	Chassis Back, Black	046102033351	1	B
63	Cord AC Power, Black	4308001810	1	Dom.
63	Cord AC Power, Black	4308006010	1	E
63	Cord AC Power, Black	4308006610	1	F,G
63	Cord AC Power, Black	4308001410	1	A,B
64	Adapter AC Plug	4428300310	1	Dom.
65	Diffuser LED	8535034260	1	
66	Stopper Cord	6518000710	1	A,B

Screws				
S1	#2BTC 3x8 ZNB	8109230083	57	
S2	#2FTC 3x8 ZNB	8129230083		
S3	WSAM 4x8 ZNB	819440083	4	
S4	#2BTC 3x6 ZNB	8109230063	9	
S5	#2BTC 3x6 ZNY	8109230061	1	
S6	#2BTC 3x12 ZNY	8109230121	7	
S7	#2WPTC 3x8 ZNY	159230081	4	
S8	HEXMPW 3x16 ZNY	8099130161		

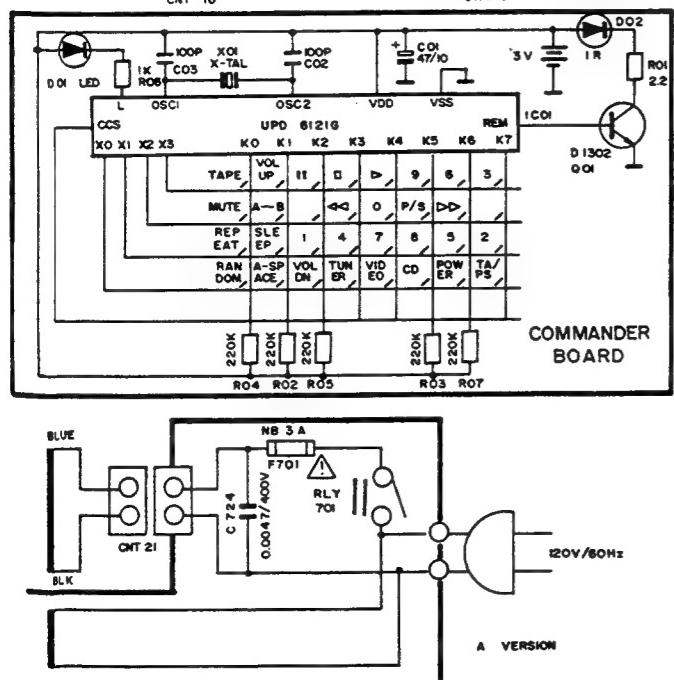
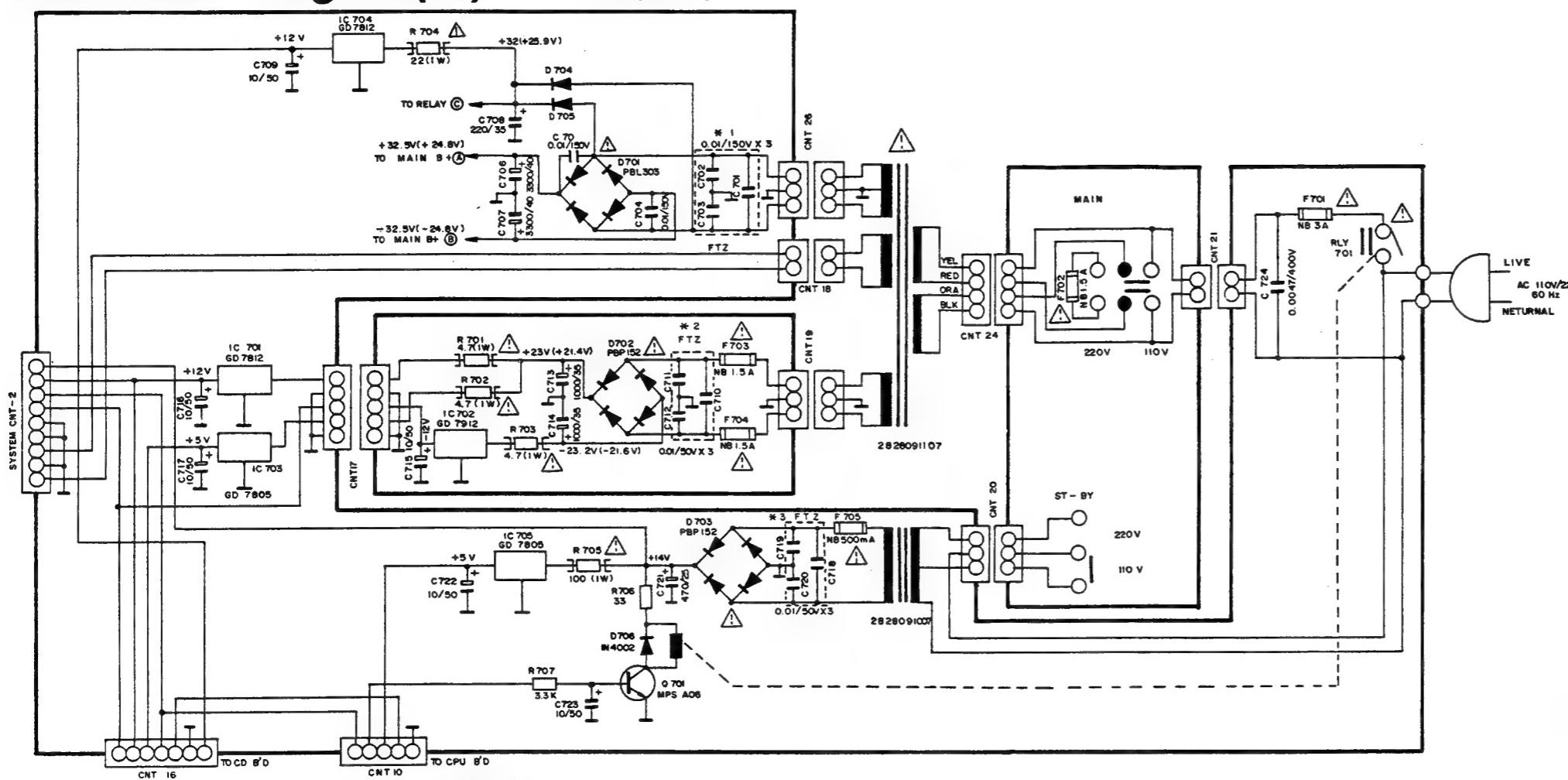
No.	Description	Part No.	Q'ty	Remark
S9	#1BT 3×35 ZNB	8109130353	4	
S10	#2PTC 4×6 ZNY	8119240061	1	
W1	Washr Plain	83050038110	1	

Schematic Diagram (I) ACD-33R(AMP)

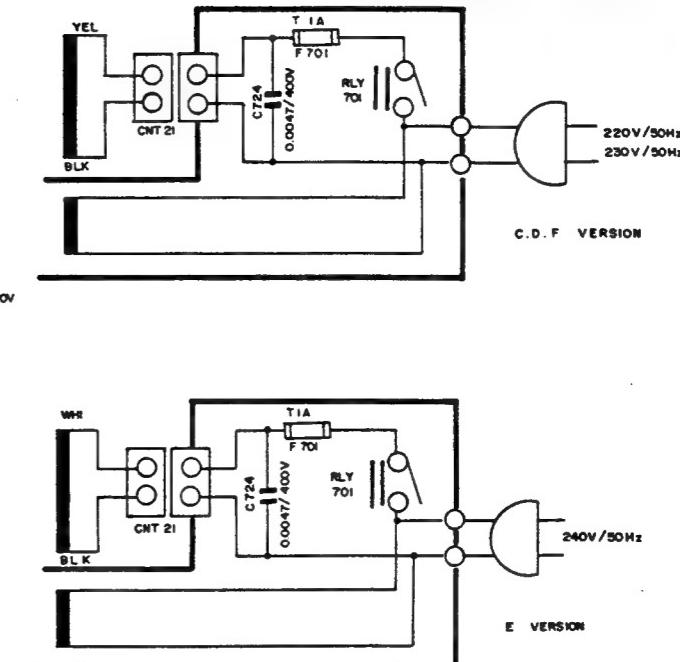
Model No. : ACD-33R



Schematic Diagram(II) ACD-33R(AMP)



Model No. : ACD-33R



NOTES

- Resistance values are indicated in ohms unless otherwise specified ($\Omega = 1,000 \text{ M} = 1,000,000$)
- Capacitance values are shown in microfarads unless otherwise noted ($\text{P} = \mu\text{F}$)
- \square : AC RMS
() : AT 1KHz 60HM LOAD

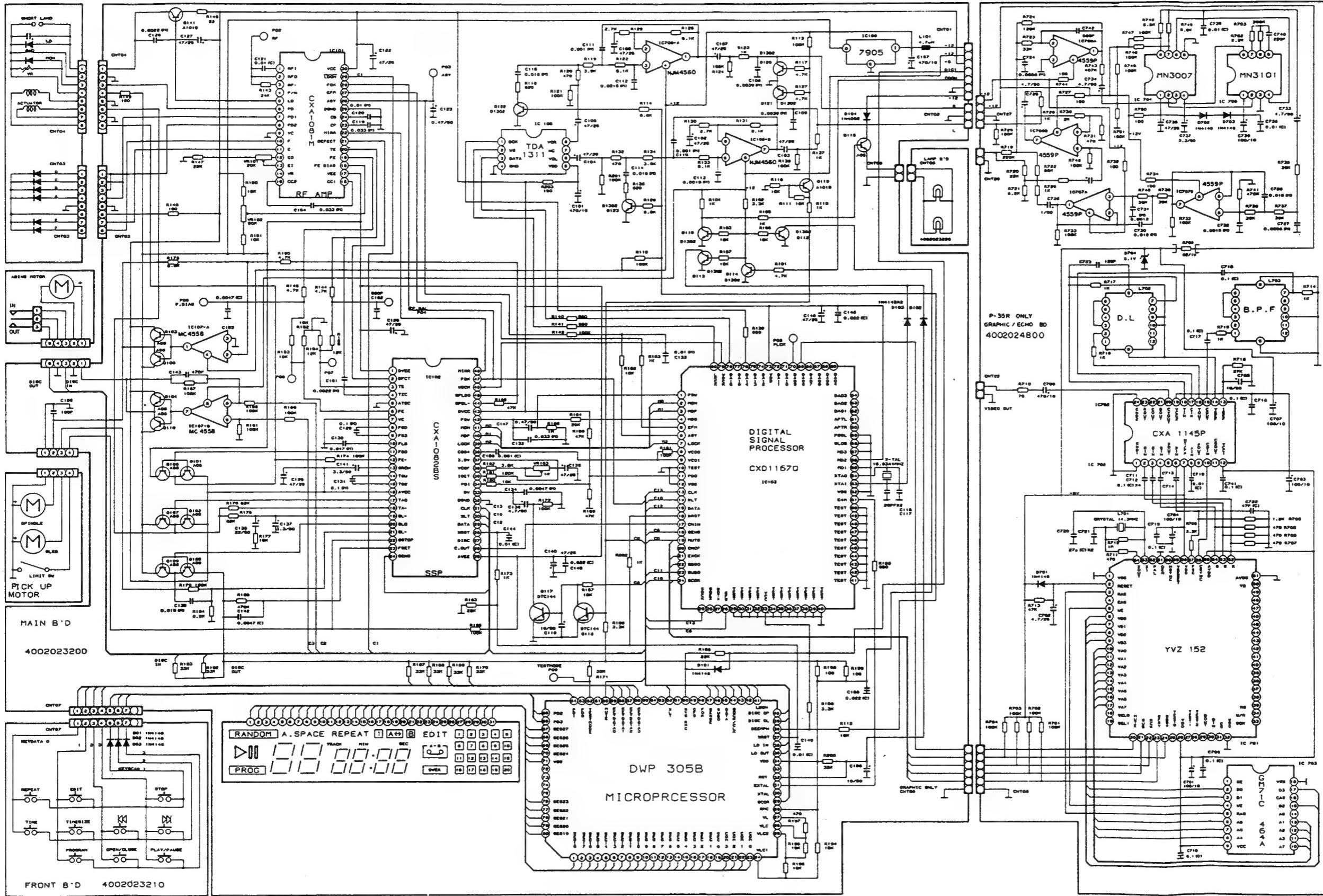
CAUTION

- Safety precautions to be followed during servicing.
 1. Since those parts marked with Δ are critical parts for safety use the described parts list.
 2. Before returning the receiver to the customer make appropriate leakage current or resistance measurements to determine that exposed parts are properly insulated from the supply circuit.

	A	B	C. D. F	E	KLE
ST / BY TRANS			2828092307	2828094307	2828092107
MAIN TRANS			2828092407	2828094207	2828092207
F 701	NB 3 A	NB 3 A	T 1 A	T 1 A	T 1 A
F 702	—	NB 1.5 A	—	—	—
F 703	NB 1.5 A	NB 1.5 A	T 1.25 A	T 1.25 A	T 1.25 A
F 704	NB 1.5 A	NB 1.5 A	T 1.25 A	T 1.25 A	T 1.25 A
F 705	NB 500 mA	NB 500 mA	T 500 mA	T 500 mA	T 500 mA
* # 1	—	—	C(x), D(0), F(x)	—	—
* # 2	—	—	C(x), D(0), F(x)	—	—
* # 3	—	—	C(x), D(0), F(x)	—	—

Schematic Diagram(III) ACD-33R(CDP)

Model No. : ACD-33R



Safety Precaution TDD-33R

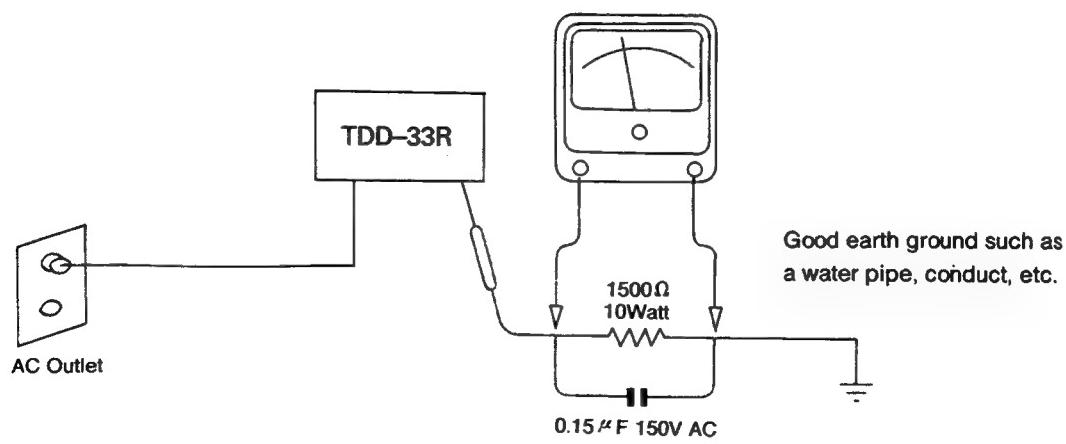
WARNING

Service should not be attempted by anyone unfamiliar with the necessary precautions on this player. The following precautions are necessary during servicing.

1. Many electrical and mechanical parts in this player have special characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristic are identified in this manual and its supplements : electrical components having such features are identified by a \triangle in the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully.
The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire or other hazards.
2. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as

terminals, screwheads, metal overlays, etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet(120V Version only).(Do not use a line isolation transformer during this check.) Use an AC voltmeter having 5000 Ω per volt or more sensitivity in the following manner : Connect a 1500 Ω 10watt resistor paralleled by a 0.15 μ F 150V AC capacitor, between a known good earth ground(water pipe, conduct, etc.)and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 Ω resistor and 0.15 μ F capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts RMS. This corresponds to 0.2mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

AC VOLT METER
(5000 Ω per volt or more sensitivity)
Reading should not exceed 0.8V



Place this probe on each exposed metallic part.

Specifications TDD-33R

FM Section

Tuning Range

USA Version 87.5-107.9MHz

Europe / Australia Version 87.5-108MHz

Scanning Frequency Interval(Auto / Manual)

USA Version 0.2MHz

Europe / Australia Version 0.05MHz

Usable Sensitivity IHF at S+N+D / N+D=30dB

2.5 μ V(13.3dBf)

50dB Quieting Sensitivity IHF,

Stereo 50 μ V(39dBf)

THD at 1kHz, 100% MOD,

Mono 0.3%

Stereo 0.5%

Stereo Separation at 1kHz

40dB

Signal to Noise Ratio IHF,

Mono 70dB

Stereo 68dB

Frequency Response

20Hz~15,000Hz +0.5 / -3dB

AM Section

Tuning Range

USA Version 520 - 1710kHz

Europe / Australia Version 522 - 1611kHz

Scanning Frequency Interval(Auto / Manual)

USA Version 10kHz

Europe / Australia Version 9kHz

Usable Sensitivity

IHF at S+N=20dB, Loop antenna 1000 μ V / m

Signal to Noise Ratio, 30% MOD. 40dB

Tape Section

Type Soft touch front loading stereo double cassette deck with Dolby NR system

Track system 4 track, 2 channel stereo playback(Deck B) and recording / playback(Deck A)

Recording system AC bias system(bias frequency : 105kHz)

Erasing system AC system

Tape speed 1.87 IPS(4.76cm / sec)

Heads Hard permalloy recording / playback head×1

Hard permalloy playback reverse head×1

Double Gap erasing head×1

Electronic governor controlled DC motor

Motor Electronic governor controlled DC motor

Wow and flutter Less than 0.2%(WRMS)

Fast winding time Approximately 120 seconds with C - 60 cassette tape

Frequency Response -20dB REC / PB

Normal tape 35-14,500Hz, \pm 3dB

CrO₂ tape 35-14,000Hz, \pm 3dB

0dB REC / PB

Signal to noise ratio

60dB(Normal tape)

62dB(CrO₂ tape)

(Weighted)

50dB(Normal tape)

52dB(CrO₂ tape)

(Weighted)

Total harmonic distortion Less than 2% at 1kHz, 0dB REC / PB

Power Requirements :

A : 120V 60Hz for USA / Canadian version

B : 120 / 220V 60 / 50Hz for multi - voltage version(switchable)

C : 230V 50Hz for General European version

D : 230V 50Hz for Germanian & Italian version

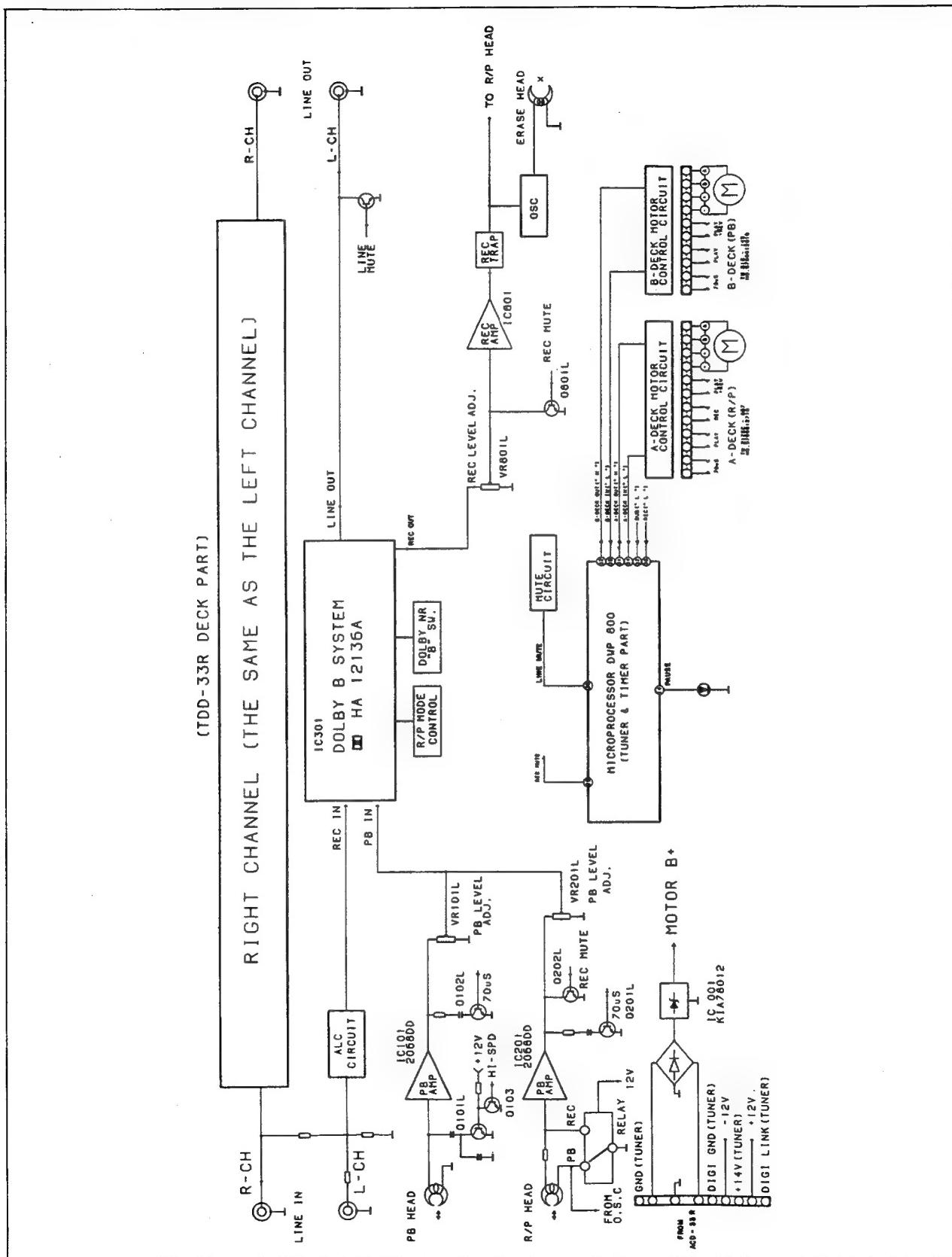
E : 240V 50Hz for British & Australian version
F : 230V 50Hz for Swiss & Scandinavian version

Dimensions	267(W)X188(H)X250(D)mm 10.5(W)X7.4(H)X9.8(D)inch
Weight(Net)	3.15kg(6lbs, 14.9ozs)

Note : Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the European standard, and provides information on regional circuit modification through use of alternate schematic diagram, and information on regional component variations though use of parts list. Design and Specifications subject to change without notice for improvement.

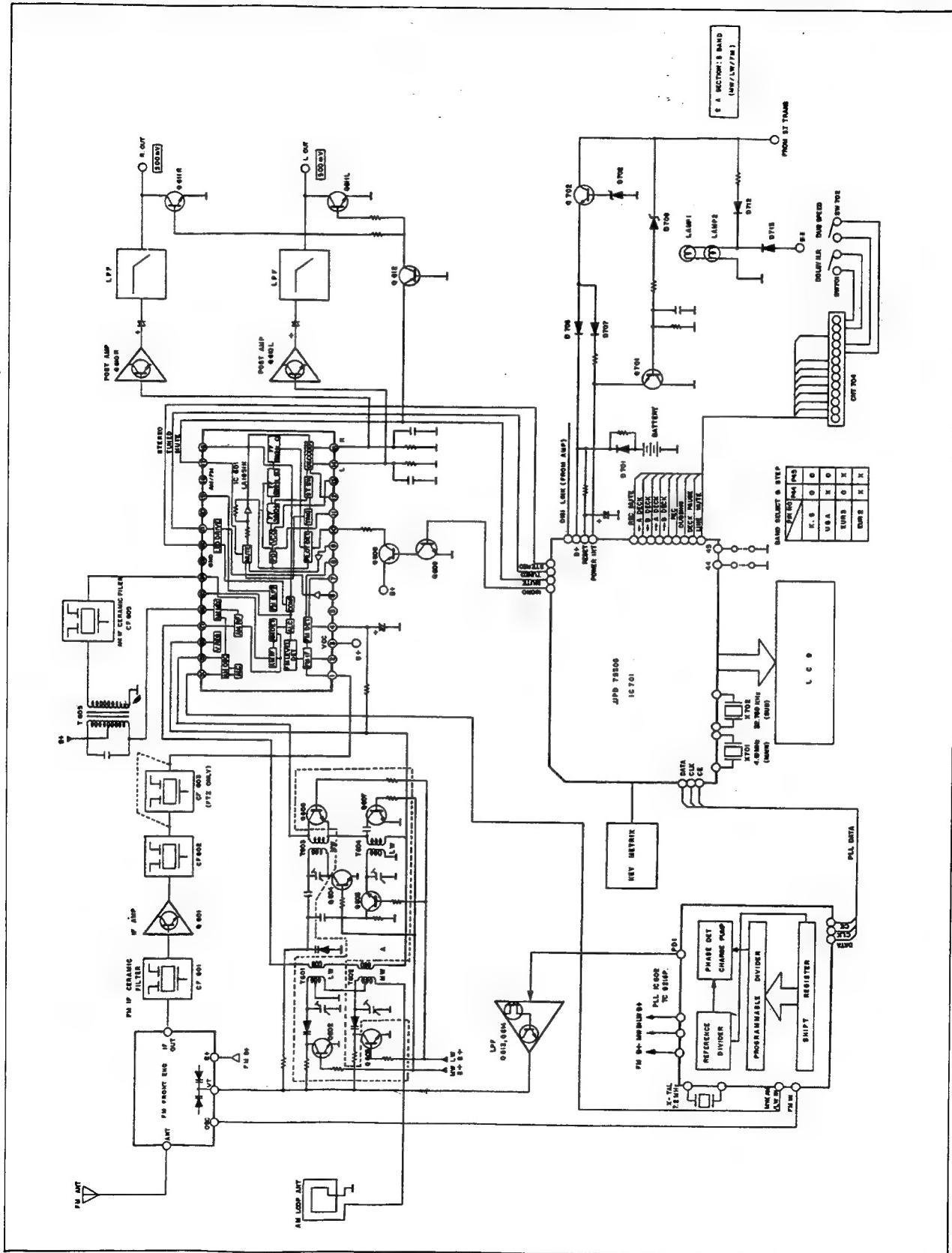
Block Diagram(I) TDD-33R(DECK)

Model No. : TDD-33R



Block Diagram (II) TDD-33R(TUNER)

Model No. : TDD-33R



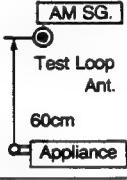
Alignment Procedures TDD-33R(TUNER)

*Before making adjustment operate the appliance for more than 2 minutes.

*Note : 1. 0 dB=1 μ V 2. FM 100% Mod.=75kHz Dev. 3. DVM=Digital Volt Meter
 4. SG=Signal Generator 5. SSG=Stereo Signal Generator

1. AM Adjustment

● Selector SW.....Tuner, AM

No	Subject	Feed Signal		Setting Appliance	Measure Output	Adjst Point	Adjst For	Remark
		From	To					
1.	Tuning Voltage	520kHz	1710kHz	*1) 520kHz	Connect DVM R646	T603	DC 1±0.2V	
		1619kHz		*2) 1710kHz		TC603	DC 8.5±0.3V	
		<ul style="list-style-type: none"> ● Repeat the step *1) and *2) until DVM reads the tuning voltage mentioned above. ● In case the freq. is 9kHz, the freq. of AM SG and appliance should be changed to *1) 522kHz *2) 1611kHz 						
2.	IF	AM IF Genescope	ANT.	1000kHz	Connect IF Genescope	T605	Symmetrical curve on AM IF Genescope	
3.	RF Tuning	*1) AM SG 600kHz, 74dB 400Hz(30%MOD.)	ANT.	600kHz	Output Connect AC Voltmeter & Oscilloscope	T602	Maximize audio output	
		*2) AM SG 1400kHz, 74dB 400Hz(30%MOD.)	ANT.	1400kHz		TC602		
		<ul style="list-style-type: none"> ● Feed Signal should be fed to Loop ant. through the TEST Loop ant., 60cm distant from the appliance ● Repeat the step *1) & *2) until no further improvement occurs. ● In case the freq. is 9kHz, the freq. of AM SG and appliance should be changed to *1) 603kHz *2) 1404kHz 						
4.	Signal Meter	AM SG 1000kHz, 80dB 400Hz(30%MOD.)	ANT.	1000kHz		VR603	Tuned light on	
		<ul style="list-style-type: none"> ● In case the frequency. step is 9kHz, the frequency of AM SG and appliance should be changed to 999kHz. 						

2. LW Adjustment

● Selector SW.TUNER, MW/AM

● This adjustment is necessary to 3 band(MW/LW/FM).

No	Subject	Feed Signal		Setting Appliance	Measure Output	Adjst Point	Adjst For	Remark
		From	To					
1.	Tuning Voltage	153kHz	279kHz	*1) 153kHz	Connect DVM to TP401	T604	DC 2±0.2V	
				*2) 279kHz		TC604	DC 5.5±0.2V	
		<ul style="list-style-type: none"> ● Repeat the step *1)and *2)until DVM reads the tuning voltage mentioned above 						
2.	RF Tuning	*1) AM SG 162kHz, 80dB 400Hz(30%MOD.)	ANT.	162kHz	Output Connect AC Voltmeter & Oscilloscope	T601	Maximize audio output	
		*2) AM SG 252kHz, 80dB 400Hz(30%MOD.)		252kHz		TC601		
		<ul style="list-style-type: none"> ● Feed Signal should be fed to Loop ant. through the Test Loop ANT 60cm distant from the appliance ● Repeat the step *1)and *2)until no further improvement occurs. 						

3.FM Adjustment

- Selector SW.....Tuner, FM(Mono/Stereo)
- Deviation.....USA/Canada(75kHz Dev.)
Europe(40kHz Dev.)

No	Subject	Feed Signal		Setting Appliance	Measure Output	Adujst Point	Adujst For	Remark
		From	To					
1.	Tuning Voltage	87.5MHz	107.9MHz	87.5MHz 107.9MHz	Connect DVM R646		DC 2.0±0.2V DC 8.0±0.2V	
2.	IF	FM IF Genescope	ANT.	98MHz 60dB	Connect IF Genescope C625 +		Symmetrical S curve on FM IF Genescope	+ \ -
3.	THD (Mono)	FM SG 98.1MHz, 60dB 1kHz (75kHz dev.)	ANT.	98.1MHz Mono	*1)Output Connect DVM	T607	DC 0±0.05V	
					*2)Output Connect AC Voltmeter & Distortion Analyzer	T606	Minimize distortion	
● Adjust the step *1) 1st and the step *2) next and repeat until to further improvement occurs.								
4.	THD (Stereo)	FM SSG 98.1MHz, 60dB 1kHz (75kHz Dev.) Pilot 19kHz (9% Mod.)	ANT.	98.1MHz Stereo	Output connect AC voltmeter & distortion	Front-End	Minimize distortion	
5.	Mute level	FM SG 98.1MHz, 15µV 1kHz (75kHz Dev.)	ANT.	98.1MHz Mono	Output connect oscilloscope	VR601	Tuned on	
6.	Separation	*1) FM SSG 98.1MHz, 60dB 1kHz(75kHz, Dev) Pilot 19kHz (10% Mod) (L ch.Mode)	ANT.	98.1MHz Stereo	R ch Mod connect AC voltmeter & distortion analyzer and oscilloscope	VR602	Minimize output	L ch Mode
		*2) Same as above (R ch.Mode)			L ch Mod connect same as above			R ch Mode
● Repeat the step *1)until no further improvement occurs.								

Alignment Procedures TDD-33R(DECK)

Tape Section

1. Before Measurements and Adjustment

The following general conditions apply to the electrical measurements and adjustments unless especially stated otherwise.

- Dolby NR switch off.
- Use 500mV (200nwb/m) for 0 dB as the standard level of the unit.
- Test tape
 - TCC-155 — Azimuth(14.5kHz -24dB)
 - TCC-112 — Tape speed(3kHz -10dB)
 - TCC-130 — Playback level(Dolby ref. tape 400Hz 0dB)
 - TCC-185C — Playback frequency response
- Reference Tape
 - Normal — TDK AC-224
 - CrO₂ — TDK AC-513

2. Instrument required

- Audio frequency oscillator
- ACVM or dual channel mV-meter
- Wow/Flutter meter
- Oscilloscop

Playback section

No.	Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	djust with	Adjust to
1.	Head Azimuth	TCC-155 14kHz (A.BEX)	FWD play (A & B Deck)		Line output	ACmV-meter Oscilloscope	Head adjusting screw (lefts side)	Max. • Lissajous' figure become a straight line with an angle 45 degrees
			REV play (B Deck)				Head adjusting screw (right side)	
2.	Playback Speed at normal	TCC-112 3kHz -10dB(A.BEX)	Play (A & B Deck)			Wow and Flutter Meter	A Deck VR901 & B Deck VR903	3000Hz±30Hz
							A Deck VR902 & B Deck VR904	
3.	Playback Speed at Hi-speed	TCC-112 3kHz -10dB(A.BEX)				ACmV-meter	A Deck VR201L/R	4500Hz±90Hz • TP901(R915)GND
							B Deck VR101L/R	
4.	Playback level	TCC-130 400Hz 0dB (A.BEX)						500mV
5.	Playback frequency response	TCC-185C 12.5kHz1kHz 60Hz(A.BEX)						See graph Fig.1 freq. response

Recording section

No.	Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	djust with	Adjust to
1.	Bias OSC Frequency	CrO ₂ TDK AC-513			White color leadwire of CNT501	Frequency Counter	OSC(L501)	105kHz
								Minimize the reading on ACVM
2.	105kHz trap suppression	CrO ₂ TDK, AC-513			TP501L/R	ACmV-meter Oscilloscope	L503L/R	66mV
3.	Target value Bias	Normal TDK, AC-224			TP201L/R		VR502L/R	34mV

No.	Adjustments	Test tape	Mode	Apply signal to	Measure on	Read on	Adjust with	Adjust to
4.	Recording Level	CrO2 TDK, AC-513		400Hz / -20dBV to line in	TP801L/R	ACmV-meter Oscilloscope	VR801L/R	*c About 14mV
				Record the Above signal onto Test tape & PB	EXT Output			Repeatedly record PB & adjust so that the PB signal level becomes $-10\text{dBV} \pm 0.5\text{dB}$
5.	Bias		Rec/Pause		EXT Output	ACmV-meter	See target value bias	*d if it necessary repeat bias adjust.
				400Hz to Line in			LF Generator	
				4kHz-6.3kHz Record/Playback a number of 10kHz-12kHz frequency with the same input 14kHz-16kHz voltage and play them back. to line input.				

Note :

- *a. Prior to any measurement or adjustment with the tape running heads and tape guides should be degaussed and cleaned. Reference below the figure.
- *b. The maximum permissible speed variation $\pm 0.5\%$. Moreover the Wow and Flutter can be read. This value should not exceed 0.2%.
- *c/The Voltage on Line out should read $500\text{mV} \pm 20\text{mV}$. If this is not the case reduce the LF signal(bias disabled) by as many dB's as the reading was too low or too high by means of VR801L/R
- *d. When the channel is adjusted this may slightly affect the adjustment of the other channel. If the adjustment is correct the frequency response curve will be similar to curve b in figure 2 distortion below 3%.

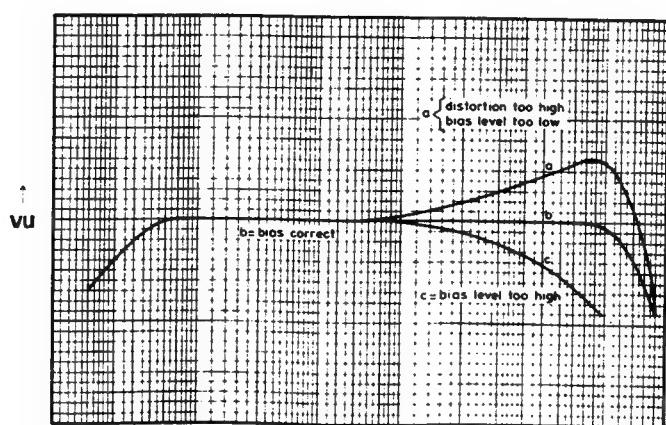


Fig. 2

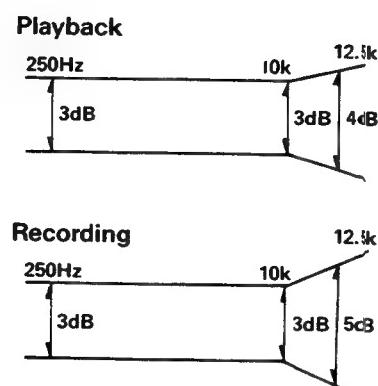
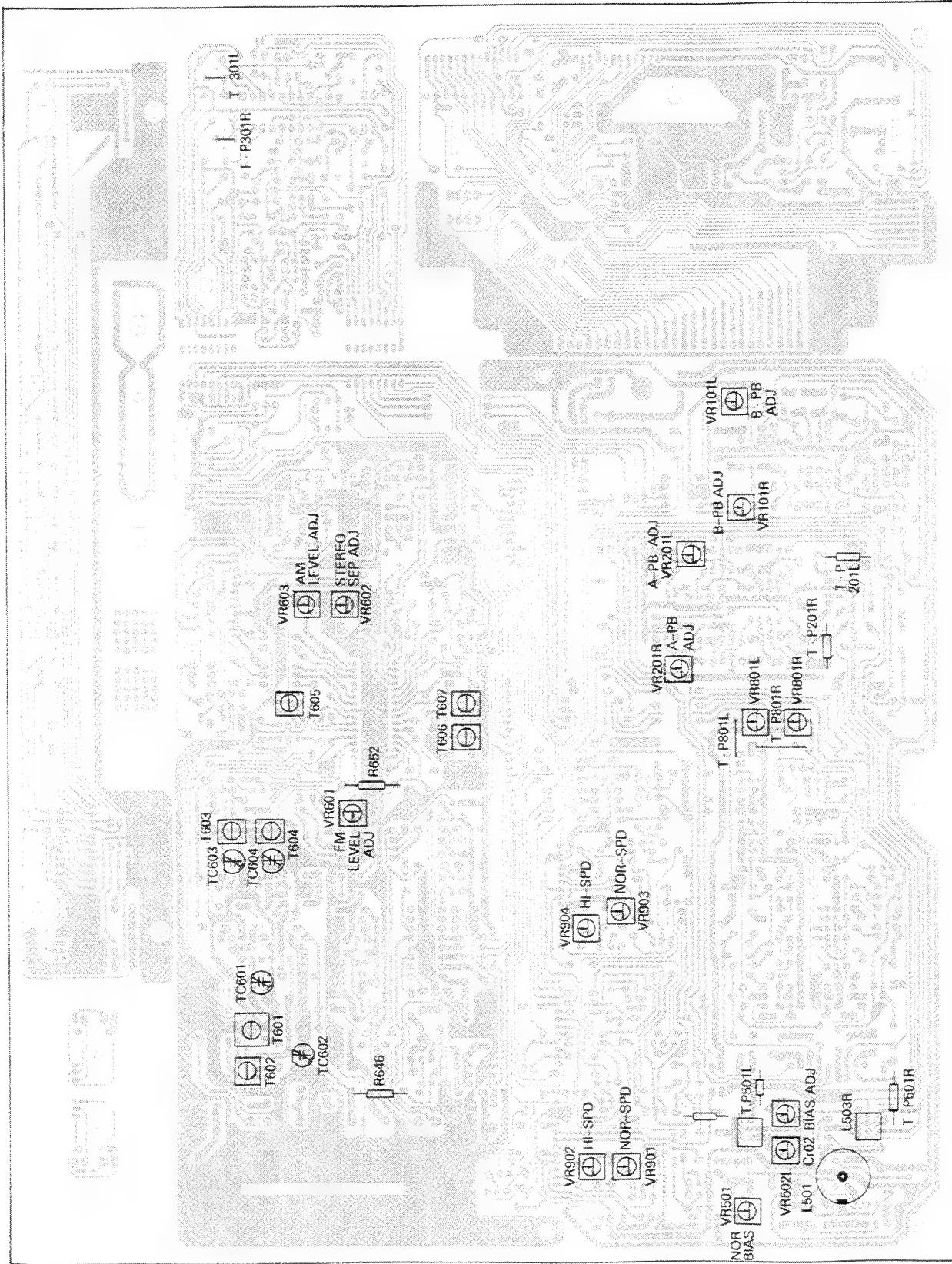
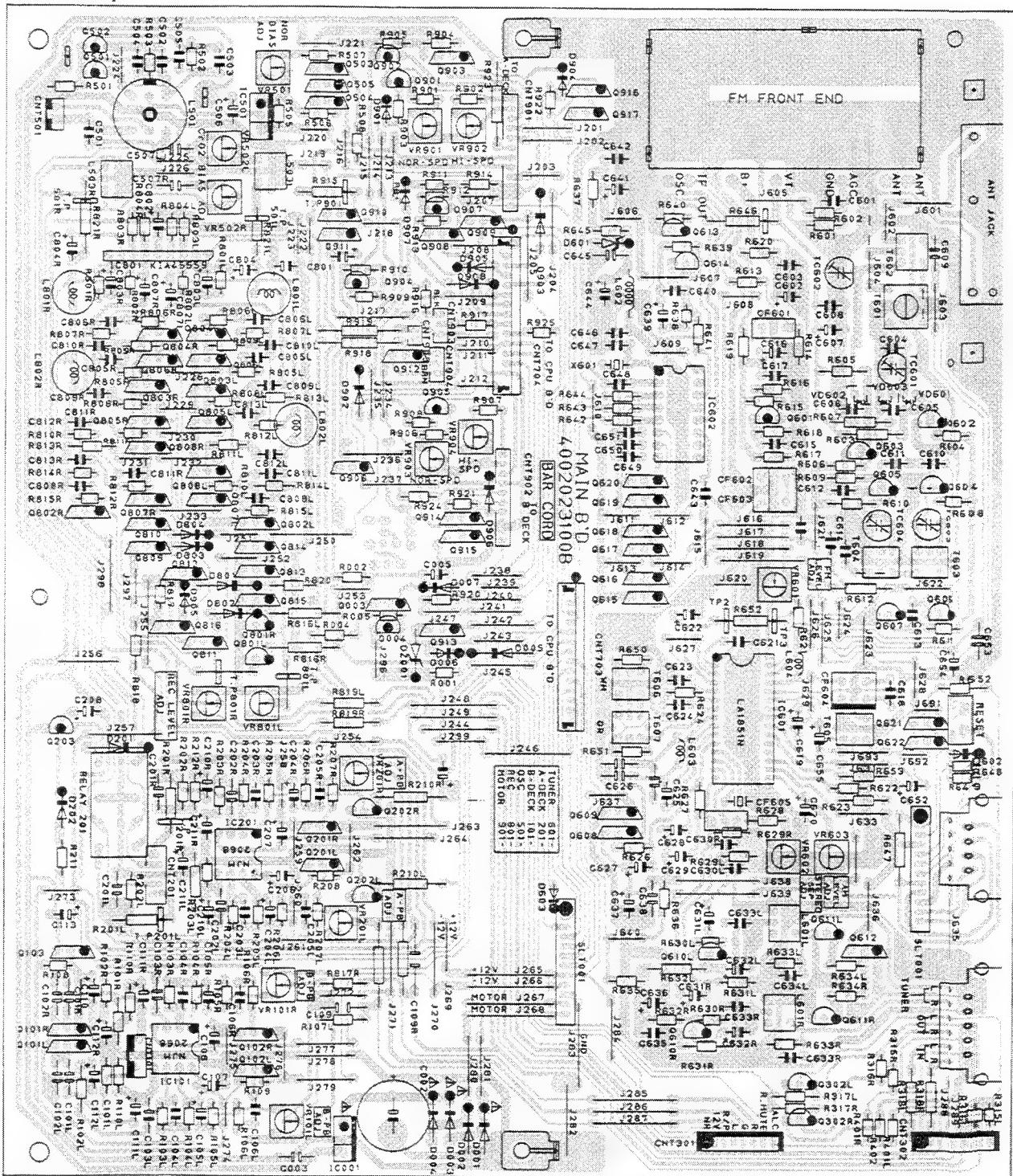


Fig. 1 Allowable Playback/Recording Frequency Response Zone

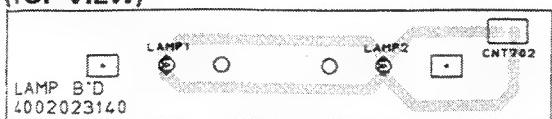
Adjustment Point



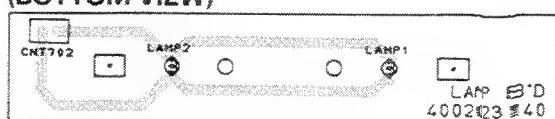
P.C.BOARDS (Top & Bottom Views) TDD-33R



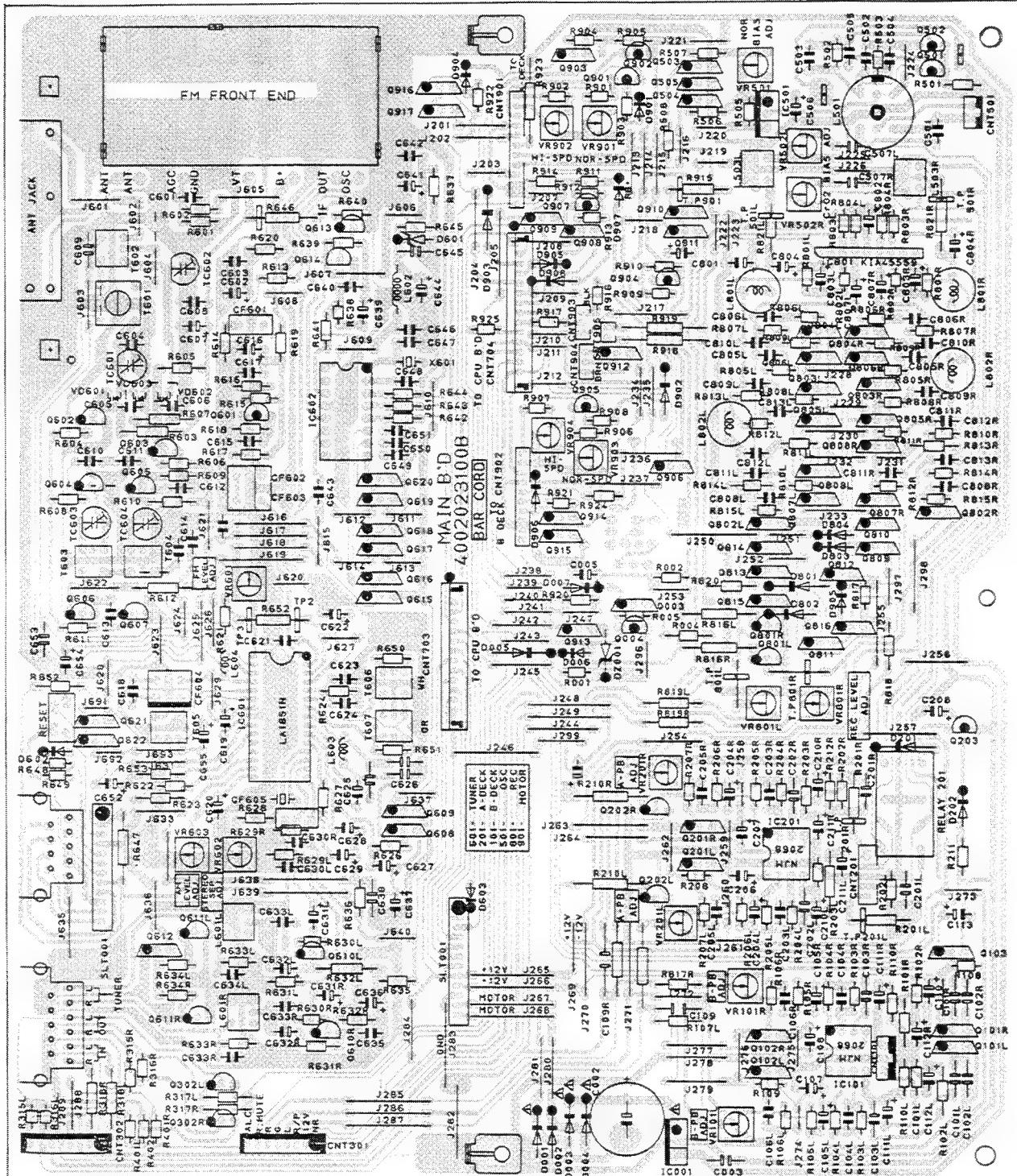
**LAMP P.C.BOARD
(TOP VIEW)**



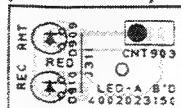
(BOTTOM VIEW)



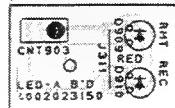
MAIN P.C.BOARD (BOTTOM VIEW)



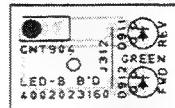
**LED(A) P.C.BOARD
(TOP VIEW)**



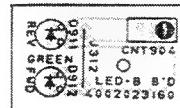
(BOTTOM VIEW)



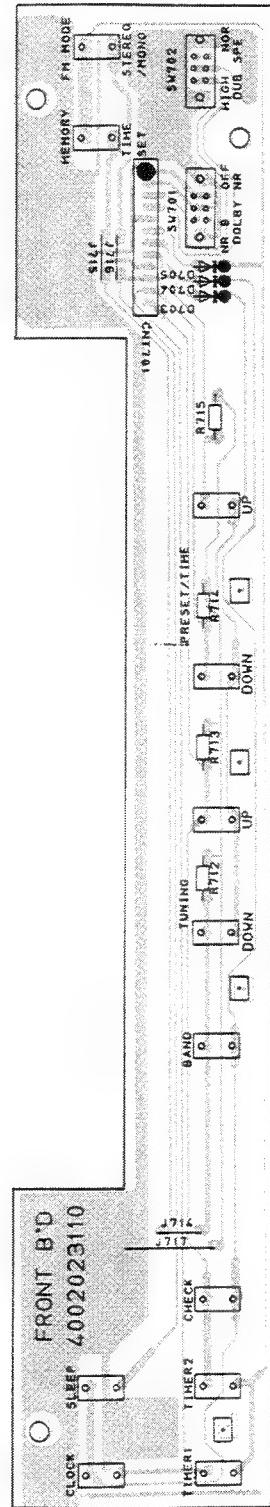
**LED(B) P.C.BOARD
(TOP VIEW)**



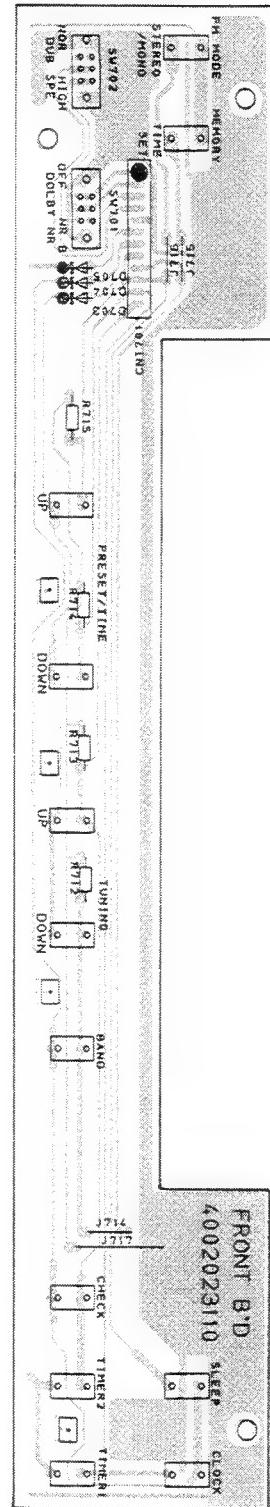
(BOTTOM VIEW)



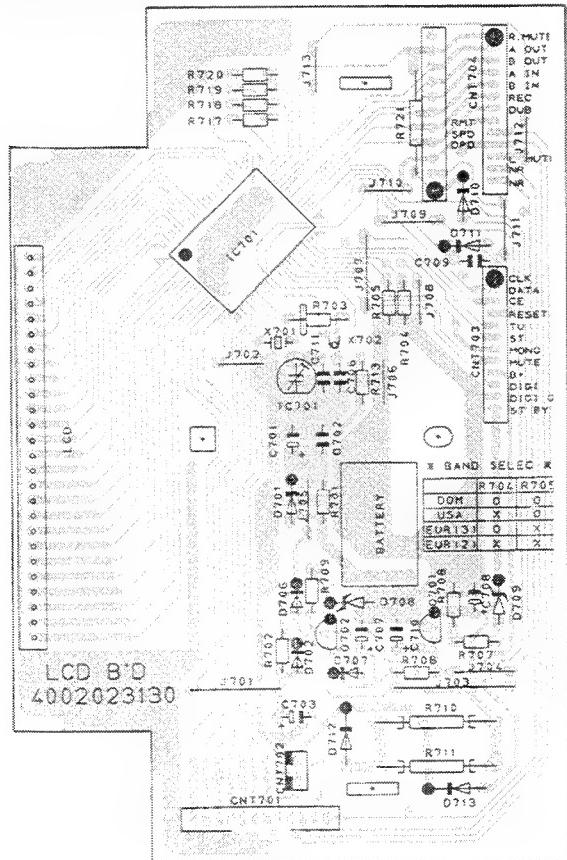
FRONT P.C.BOARD (TOP VIEW)



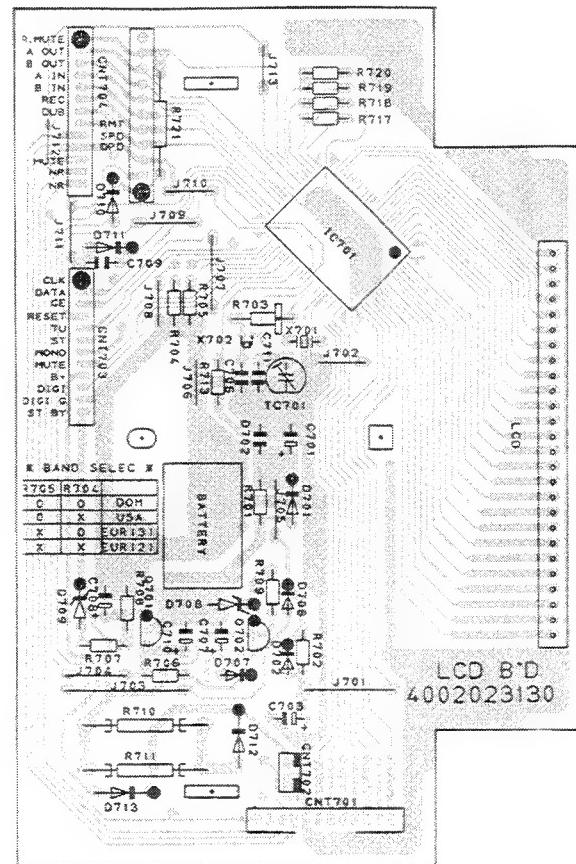
(BOTTOM VIEW)



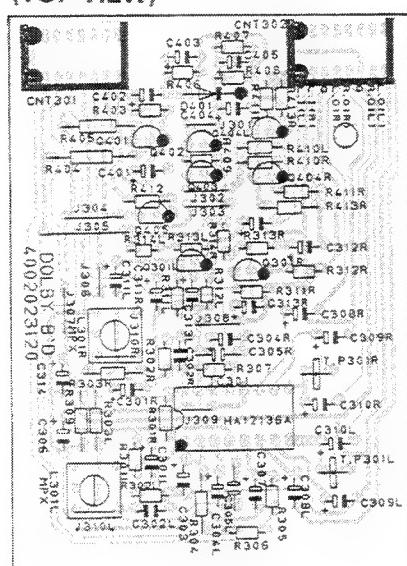
**LCD P.C.BOARD
(TOP VIEW)**



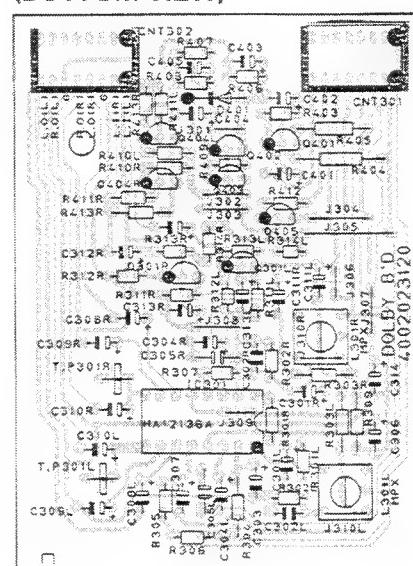
(BOTTOM VIEW)



**DOLBY P.C.BOARD
(TOP VIEW)**

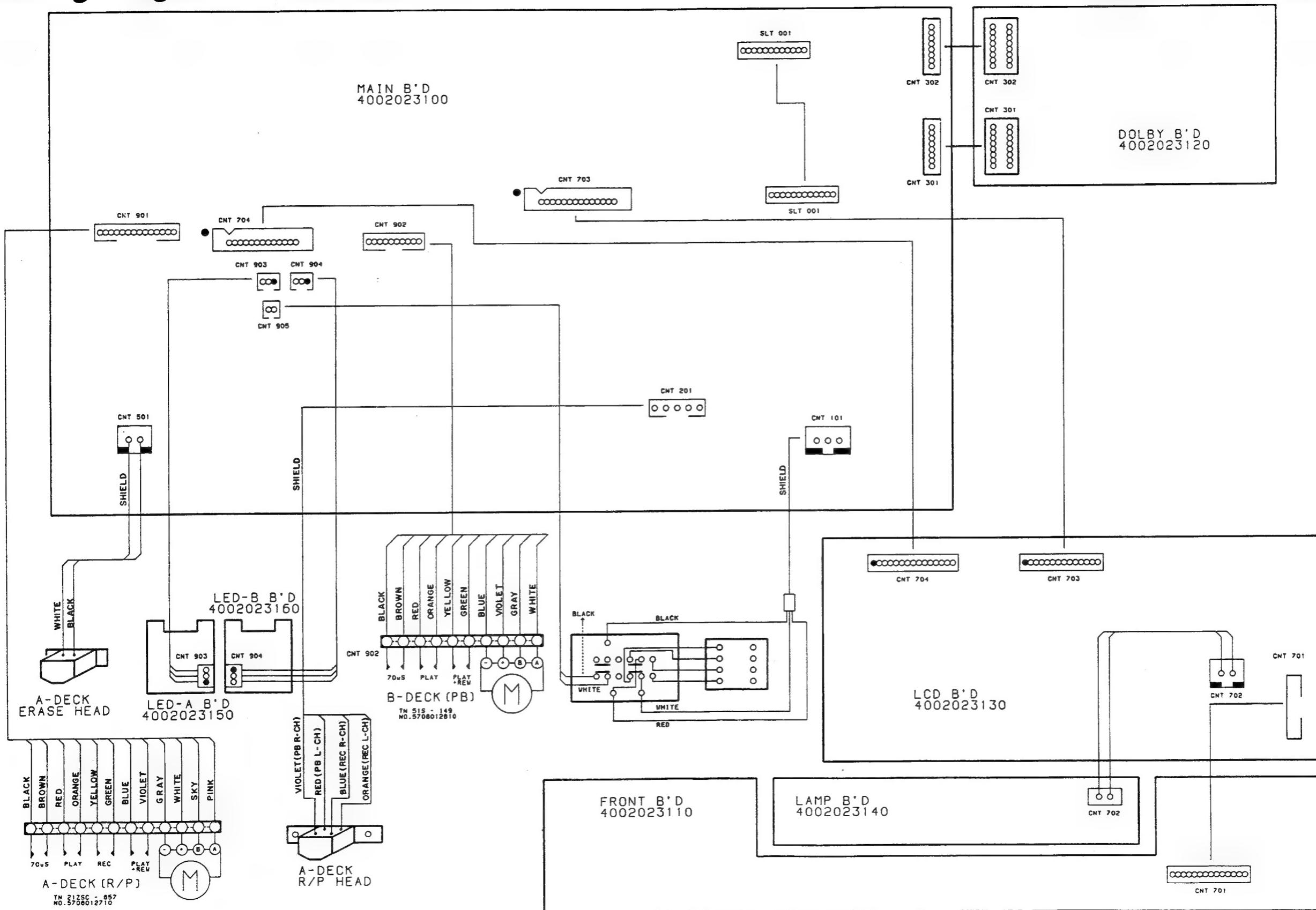


(BOTTOM VIEW)



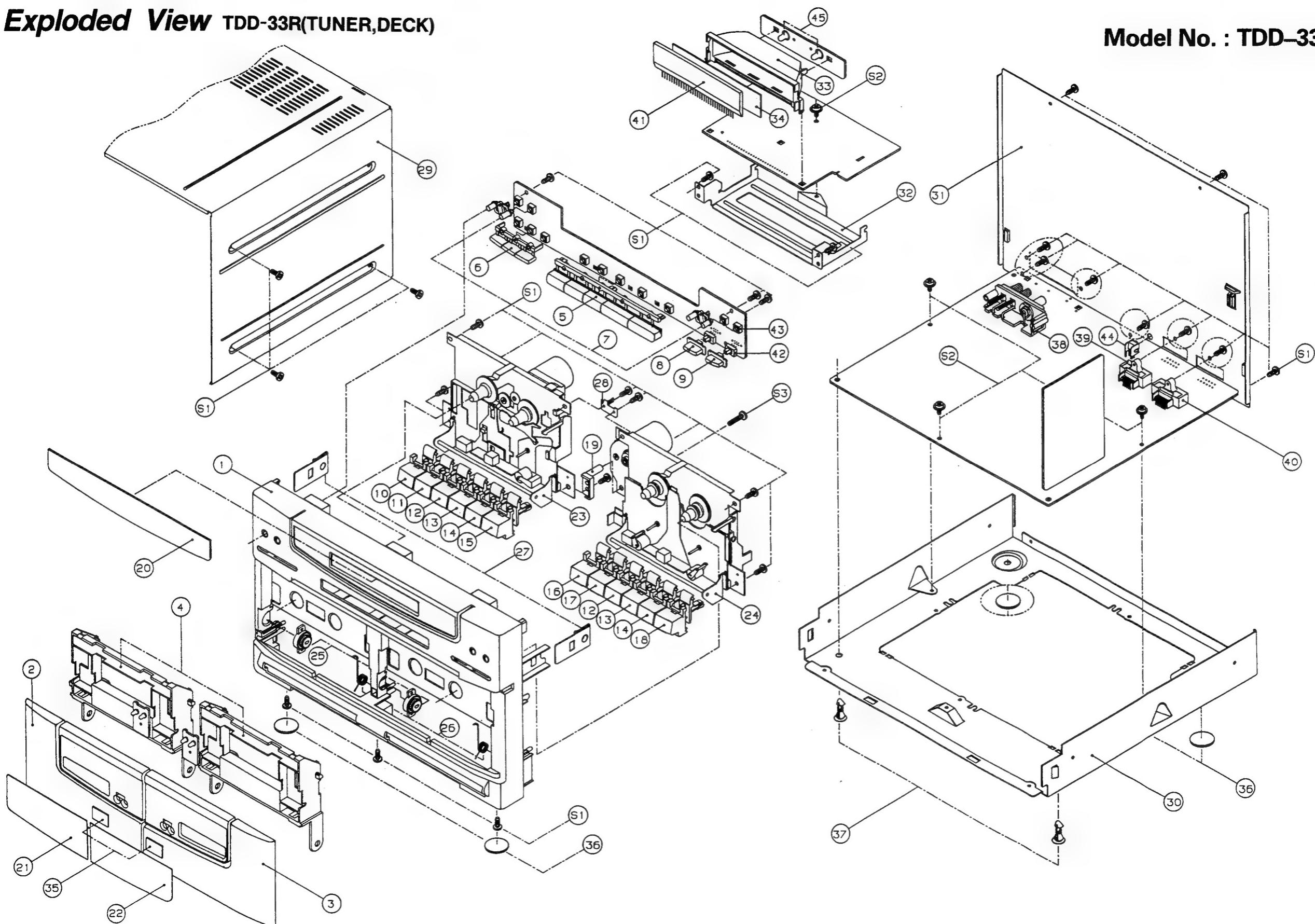
Wiring Diagram TDD-33R(TUNER,DECK)

Model No. : TDD-33R



Exploded View TDD-33R(TUNER,DECK)

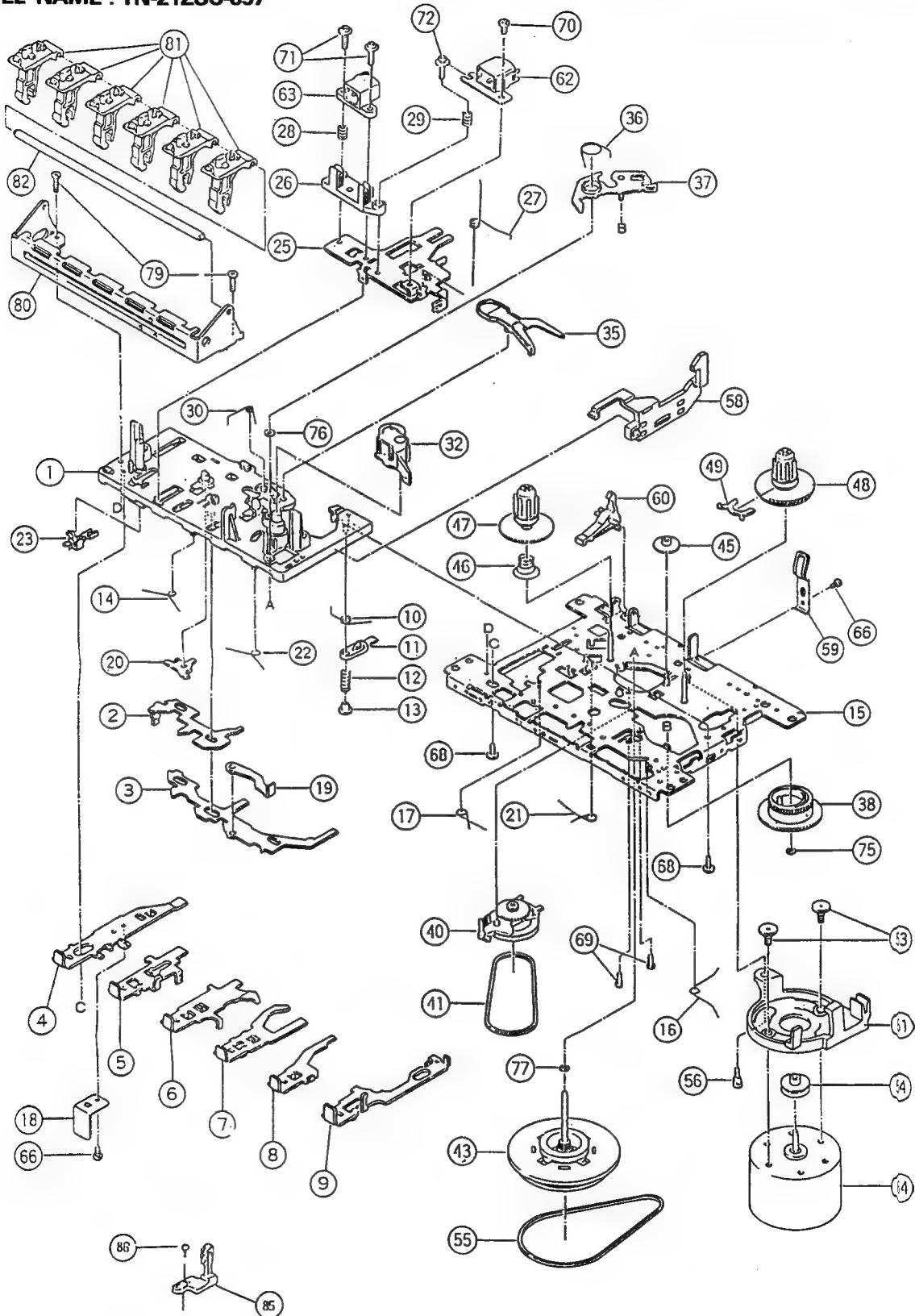
Model No. : TDD-33R



Exploded View(I) (Deck Mechanism Ass'y)

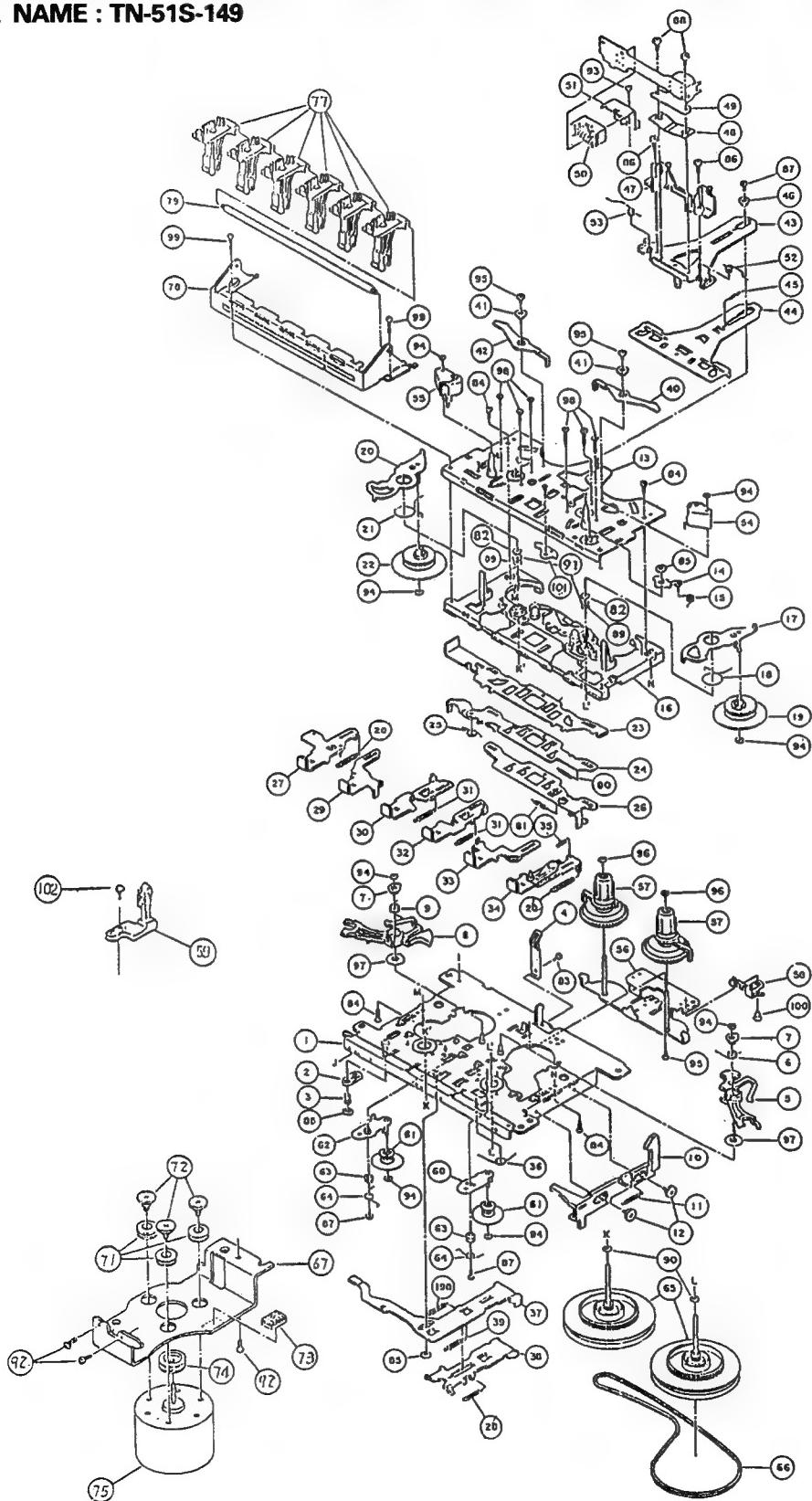
Model No. : TDD-33R

MODEL NAME : TN-21ZSC-857



Exploded View(II) (Deck Mechanism Ass'y) Model No. : TDD-33R

MODEL NAME : TN-51S-149



Electrical Parts List TDD-33R(TUNER,DECK)

PRODUCT SAFETY NOTICE: If you replace any of these components, Carefully read the product safety notice of this manual. Don't degrade the safety of the product through improper servicing. Remark meaning for version, so refer to power requirement of Specifications in this manual. Resistors & Capacitors tolerance ; D : ($\pm 0.5\%$), J : ($\pm 5\%$), K : ($\pm 10\%$), M : ($\pm 20\%$), Z : (+80%, -20%).

Ref.No	Part No.	Description			Remark	Ref.No	Part No.	Description			Remark						
Main P.C.Board																	
Capacitors																	
C001	-	Not used !				C620	3479210071	Electric SA	10 μ F	50V	M						
C002	3409247149	Electric SA	470 μ F	25V	M	C621	3519473935	Ceramic	0.047 μ F	50V	Z						
C003	3519104935	Ceramic	0.1 μ F	50V	Z	C622	3479233971	Electric SA	3.3 μ F	50V	M						
C004	-	Not used !				C622	3479247871	Electric SA	0.47 μ F	50V	M						
C005	3479210121	Mylar	100 μ F	100V	J	C623	3679392120	Mylar	0.0039 μ F	100V	J						
C101L/R	3519102935	Ceramic	1000pF	50V	Z	C624	3679183120	Mylar	0.018 μ F	100V	J						
C102L/R	3519102935	Ceramic	1000pF	50V	Z	C625	3479210071	Electric SA	10 μ F	50V	M						
C103L/R	3519101935	Ceramic	100pF	50V	Z	C626	3519330935	Ceramic	33pF	50V	Z						
C104L/R	3679822120	Mylar	0.0082 μ F	100V	J	C627	3479210971	Electric SA	1 μ F	50V	M						
C105L/R	3479210971	Electric SA	1 μ F	50V	M	C628	3479233871	Electric SA	0.33 μ F	50V	M						
C106L/R	3679203120	Mylar	0.02 μ F	100V	J	C629	3479210971	Electric SA	1 μ F	50V	M						
C107/C108	3479233041	Electric SA	33 μ F	25V	M	C630L/R	3679562120	Mylar	0.0056 μ F	100V	J						
C109L/R	3519391935	Ceramic	390pF	50V	J	C630L/R	3679822120	Mylar	0.0082 μ F	100V	J						
C110	3479247971	Electric SA	4.7 μ F	50V	M	C631L/R	3479233971	Electric SA	3.3 μ F	50V	M						
C111L/R	3479210971	Electric SA	1 μ F	50V	M	C632L/R	3479233971	Electric SA	3.3 μ F	50V	M						
C112L/R	3479210121	Electric SA	100 μ F	10V	M	C633L/R	3679222120	Mylar	0.0022 μ F	100V	J						
C113	3479210971	Electric SA	4.7 μ F	50V	M	C634L/R	3679392120	Mylar	0.0039 μ F	100V	J						
C201L/R	3519681935	Ceramic	680pF	50V	Z	C635	3519223935	Ceramic	0.022 μ F	50V	Z						
C202L/R	3519101935	Ceramic	100pF	50V	Z	C636/637	3479247041	Electric SA	47 μ F	25V	M						
C203L/R	3679822120	Mylar	0.0082 μ F	100V	J	C638	3519223935	Ceramic	0.022 μ F	50V	Z						
C204L/R	3479210971	Electric SA	1 μ F	50V	M	C639	3479210971	Electric SA	1 μ F	50V	M						
C205L/R	3679203120	Mylar	0.02 μ F	100V	J	C640	3519103935	Ceramic	0.01 μ F	50V	Z						
C206/C207	3479233041	Electric SA	33 μ F	25V	M	C641	3479247041	Electric SA	47 μ F	25V	M						
C208L/R	-	Not used !				C642	3519223935	Ceramic	0.022 μ F	50V	Z						
C209	3479210071	Electric SA	10 μ F	50V	M	C643	3519103935	Ceramic	0.01 μ F	50V	Z						
C210L/R	3479210971	Electric SA	1 μ F	50V	M	C644	3479247041	Electric SA	47 μ F	25V	M						
C211L/R	3479210121	Electric SA	100 μ F	10V	M	C645	3519223935	Ceramic	0.022 μ F	50V	Z						
C501	3609272130	Mylar	0.0027 μ F	160V	J	C646	-	Not used !									
C502 - C505	3679103120	Mylar	0.01 μ F	100V	J	C647 - 648	3519330935	Ceramic	33pF	50V	Z						
C506	-	Not used !				C647 - 648	3519473935	Ceramic	47pF	50V	Z						
C507L/R	3519471935	Ceramic	470pF	50V	Z	C649 - 651	3519101935	Ceramic	100pF	50V	Z						
C601	3519223935	Ceramic	0.022 μ F	50V		C652	3479222971	Electric SA	2.2 μ F	50V	M						
C601	-	Not used !				C652	3479233971	Electric SA	3.3 μ F	50V	M						
C602	3479210131	Electric SA	100 μ F	16V	M	C653	3519223935	Ceramic	0.022 μ F	50V	Z						
C603	3519223935	Ceramic	0.022 μ F	50V	Z	C654	3479247041	Electric SA	47 μ F	25V	M						
C604	3519150935	Ceramic	15pF	50V	Z	C655	3479233971	Electric SA	3.3 μ F	50V	M						
C605	3519103935	Ceramic	0.01 μ F	50V	Z	C655	3479210071	Electric SA	10 μ F	50V	M						
C606	3519472395	Ceramic	0.047 μ F	50V	Z	C801/C802	3479233041	Electric SA	33 μ F	25V	M						
C607	3479247871	Electric SA	0.47 μ F	50V	M	C802	3479233041	Electric SA	33 μ F	25V	M						
C608 - 609	3519223935	Ceramic	0.022 μ F	50V	Z	C803L/R	3479222871	Electric SA	0.22 μ F	50V	M						
C610	3619471110	Poly	470pF	50V	J	C804L/R	3479210971	Electric SA	1 μ F	50V	M						
C611	3619181110	Poly	180pF	50V	J	C805L/R	3679103120	Mylar	0.01 μ F	100V	J						
C612	-	Not used !				C806L/R	3679273120	Mylar	0.27 μ F	100V	J						
C613	3519223935	Ceramic	0.022 μ F	50V	Z	C807L/R	3479210971	Ceramic	1 μ F	50V	M						
C614 - 615	3519223935	Ceramic	0.022 μ F	50V	Z	C808L/R	3679393120	Mylar	0.033 μ F	100V	J						
C616	3479247041	Electric SA	47 μ F	25V	M	C809L/R	3679203120	Mylar	0.02 μ F	100V	J						
C617	3519223935	Ceramic	0.022 μ F	50V	Z	C810L/R	3679203120	Mylar	0.02 μ F	100V	J						
C618	3519470935	Ceramic	47pF	50V	Z	C811L/R	3679153120	Mylar	0.015 μ F	100V	J						
C619	3479210971	Electric SA	1 μ F	50V	M	C812L/R	3679223120	Mylar	0.022 μ F	100V	J						
						C813L/R	3679103120	Mylar	0.01 μ F	100V	J						

Ref.No	Part No.	Description	Remark
Connectors			
SLT001	4119212145	Wire 12P	
CNT101	4428517610	Plug 3P	
CNT201	4428516410	Plug 5P	
CNT301	4428560080	Plug 8P	
CNT302	4428560080	Plug 8P	
CNT501	4428517510	Plug 2P	
CNT703	4428532020	Wire Trap 12P, From LCD Board	
CNT704	4428532120	Wire Trap 3P, From LCD Board	
CNT901	4428517110	Plug 12P	
CNT902	4428516910	Plug 10P	
CNT903	4428525440	Plug 3P	
CNT904	4428526440	Plug 3P	
CNT905	4428516110	Plug 2P	
Coils			
L301L/R		Not used !	
L501	2638601150	OSC, 105kHz	
L601L/R	2658301100	MPX 19kHz Filter	
T601	2608201130	LW ANT Coil	LW
T602	2608201120	AM ANT Coil	
T603	2638201150	AM OSC Coil	
T604	2638401160	LW OSC Coil	LW
T605	2848001250	AM IFT Coil	
T606	2628000070	FM FM DET, White	
T607	2628000060	FM DET, Green	
AM ANT Loop	2608207360	AM ANT Loop	
L801L/R	2648601700	Induct, 5.5mH	
L802L/R	2648601140	Induct, 3.0mH	
L803L/R	2658501080	Trap, 105kHz	
Diodes			
D001 - D004	2258106100	1N4002	
D005 - D007	2058322101	1N4148M	
D201	2258106100	1N4002	
D202	2058322101	1N4148M	
D401	2058322101	1N4148M	C,D,E,F DOM,A
D601	2058599103	Zener, MTZ 5.1	
D602	2058322101	1N4148M	
D603	2058322101	1N4148M	
D603		Jumper	
D801 - D805	2058322101	1N4148M	
D901 - D912	2058322101	1N4148M	
ZD001	2258599107	Zener, UZ 9.1B	
VD601 - 603	2058819105	Varactor, KV1235Z	LW
VD602 - 603	2058819106	Varactor, KV1236Z	

Ref.No	Part No.	Description	Remark
Ceramic Filters			
CF601 - 602	3908011001	Ceramic Filter 10.7MA8K - A	DOM,A
CF601 - 602	3908011011	Ceramic Filter 10.7MS3GH	C,D,E,F
CF603	3908011011	Not used !	DOM,A
F603	3908011011	Ceramic Filter 10.7MS3GH	D
CF604	3908001150	Ceramic Filter SFZ450B	
CF605	3938131600	Resonator CSB456F	
X601	3908101030	X - TAL 7.2MHz	DOM,A
X601	3908101031	X - TAL 7.2MHz	C,D,E,F
IC's			
IC001	2168606104	KIA78012AP, Regulator	
IC101	2168020106	NJM2068D, PB Amp.	
IC201	2168020106	NJM2068D, PB Amp.	
IC501	2168600112	ADJ LM317, Regulator	
IC601	2168417114	LA1851N, IF+MPX	
IC602	2168007205	TC9216P, PLL IC	
IC801	2168206103	KIA4559S, REC AMP.	
Front END			
FM Front - END	3928801930	FE 306 - A15	DOM,A
FM Front - END	3928801970	FE 407 - A15	C,E,F
FM Front - END	3928818900	FE 407 - G60	D
Relay			
RLY201	5528001020	RELAY, RZ - 12V	
Resistors			
R001	3069331970	330Ω	
R002	3069513970	51kΩ	
R003		Not used !	
R004	3069153970	15kΩ	
R005	3069562970	5.6kΩ	
R101L/R	3069274970	270kΩ	
R102L/R	3069101970	10Ω	
R103L/R	3069274970	270kΩ	
R104L/R	3069223970	22kΩ	
R105L/R	3069332970	3.3kΩ	
R106L/R	3069392970	3.9kΩ	
R107L/R	30693333970	33kΩ	
R108/R109	3069103970	10kΩ	
R110L/R	3069104970	100kΩ	
R201L/R	3069101970	100Ω	
R202L/R	3069274970	270kΩ	
R203L/R	3069101970	100Ω	
R204L/R	3069274970	270kΩ	
R205L/R	3069223970	22kΩ	
R206L/R	3069332970	3.3kΩ	
R207L/R	3069392970	3.9kΩ	
R208	3069103970	10kΩ	
R209L/R	30693333970	33kΩ	
R210L/R	3069332970	3.3kΩ	
R211	3069103970	10kΩ	
R212L/R	3069104970	100kΩ	
R213	3069473970	47kΩ	
R315L/R	3069102970	1Ω	
R316L/R	3069103970	10kΩ	
R317L/R	3069332970	3.3kΩ	

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R318L/R	3069473970	47kΩ		R647	3069103970	10kΩ	
R401L/R	3069333970	33kΩ		R648	3069223970	22kΩ	
R402	3069123970	12kΩ		R649	3069224970	220kΩ	
R501	3069100970	10Ω		R650	3069332970	3.3kΩ	
R502	3069333970	33kΩ		R651	3069822970	8.2kΩ	
R503	3069333970	33kΩ		R652	3069102970	1kΩ	
R504		Not used !		R653	3069153970	15kΩ	
R505	3069103970	10kΩ		R801L/R	3069564970	560kΩ	
R506	3069123970	12kΩ		R802L/R	3069682970	6.8kΩ	
R507	3069102970	1kΩ		R803L/R	3069392970	3.9kΩ	
R508	3069103970	10kΩ		R804L/R	3069473970	47kΩ	
R601		Not used !	DOM.A	R805L/R	3069203970	20kΩ	
R601	3069823970	82kΩ	C.E.F	R806L/R	3069302970	3kΩ	
R601	3069104970	100kΩ	D	R807L/R	3069123970	12kΩ	
R602	3069104970	100kΩ	C.D.E.F	R808L/R	3069101970	100Ω	
R602		Not used !	DOM.A	R809L/R	3069470970	47Ω	
R603	3069104970	100kΩ	LW	R810L/R		Not used !	
R604	3069473970	47kΩ	LW	R811L/R	3069100970	10Ω	
R605	3069104970	100kΩ	LW	R812L/R	3069362970	3.6kΩ	
R606	3069473970	47kΩ	LW	R813L/R	3069273970	3.6kΩ	
R607	3069104970	100kΩ	LW	R814L/R	3069183970	18k	
R608	3069473970	47kΩ	LW	R815L/R	3069152970	1.5kΩ	
R609	3069155970	1.5MΩ	LW	R816L/R	3069102970	1kΩ	
R610 – R612	3069473970	47kΩ	LW	R817	3069102970	1kΩ	
R613	3069181970	180Ω	DOM.A,C,E,F	R818	3069822970	8.2kΩ	
R613		Jumper	D	R819L/R	3069102970	1kΩ	
R614	3069561970	560Ω	DOM.A,C,E,F	R820	3069103970	10kΩ	
R614		Not used !	D	R821	3069562970	5.6kΩ	
R615	3069102970	1kΩ	D	R901	3069221970	220Ω	
R615	3069332970	3.3kΩ	DOM.A,C,E,F	R902	3069102970	1kΩ	
R616	3069561970	560Ω		R903	3069473970	47kΩ	
R617 – R618	3069331970	330Ω		R904	3069102970	1kΩ	
R619 – R620	3069820970	82Ω	C,D,E,F	R905	3069223970	22kΩ	
R619 – R620	3069181970	180Ω	DOM.A	R906	3069221970	220Ω	
R621	3069393970	39kΩ		R907	3069102970	1kΩ	
R622	3069223970	22kΩ		R908	3069473970	47kΩ	
R623	3069273970	27kΩ		R909	3069102970	1kΩ	
R624	3069123970	12kΩ	DOM.A	R910	3069223970	22kΩ	
R624	3069473970	47kΩ	C,D,E,F	R911	3069822970	8.2kΩ	
R625		Not used !		R912	3069473970	47kΩ	
R626	3069332970	3.3kΩ		R913/R914	3069562970	5.6kΩ	
R627	3069512970	5.1kΩ		R915	3069103970	10kΩ	
R628	3069221970	220Ω		R916	3069102970	1kΩ	
R629L/R	3069103970	10kΩ		R917	3069221970	220Ω	
R630L/R	3069824970	820kΩ		R918/R919	3069102970	1kΩ	
R631L/R	3069302970	3kΩ	DOM.A	R920	3069103970	10kΩ	
R631L/R	3069202970	2kΩ	C,D,E,F	R921/R922	3069561970	560Ω	
R632L/R	3069512970	5.1kΩ		R923/R924	3069102970	1kΩ	
R633L/R	3069332970	3.3kΩ		R925	3069822970	8.2kΩ	
R634L/R	3069332970	3.3kΩ					
R635	3069221970	220Ω					
R636	3069101970	100Ω					
R637	3069221970	220Ω					
R638	3069152970	1.5kΩ					
R639	3069103970	10kΩ					
R640	3069101970	100Ω					
R641	3069821970	820Ω					
R642 – R644	3069102970	1kΩ					
R645	3069221970	220Ω					
R646	3069102970	1kΩ					

Ref.No	Part No.	Description	Remark
Q203	2208606114	KMPS A06 NPN	
Q302L/R	2208606112	KTD1302S NPN	
Q501 - Q502	2208606114	KMPS A06 NPN	
Q503 - Q504	2208622108	DTC114TS NPN	
Q505	2208622105	DTA114YS PNP	
Q601	2208409101	LM9018F NPN	
Q602 - Q607	2208606104	KTC1815Y NPN	LW
Q608	2208622105	DTA114YS PNP	
Q609	2208622108	DTC114TS NPN	
Q610L/R	2208606108	KTC2240BL NPN	
Q611L/R	2208606112	KTD1302S NPN	
Q612	2208622105	DTA114YS PNP	LW
Q613	2208606108	KTC2240BL NPN	
Q614	2208211100	2SK168D FET	
Q615	2208622105	DTA114YS PNP	LW
Q616	2208622108	DTC114TS NPN	LW
Q617	2208622105	DTA114YS PNP	LW
Q618	2208622108	DTC114TS NPN	LW
Q619	2208622105	DTA114YS PNP	
Q620 - Q622	2208622108	DTC114TS NPN	
Q801L/R	2208606112	KTD1302S NPN	
Q802L/R	2208622108	DTC114TS NPN	
- 808L/R			
Q809 - Q812	2208622105	DTA114YS PNP	
Q813 - Q815	2208622106	DTC114YS NPN	
Q901 - Q902	2208206113	KMPS A56 PNP	
Q903	2208622106	DTC114YS NPN	
Q904 - Q905	2208206113	KMPS A56 PNP	
Q906	2208622106	DTC114YS NPN	
Q907	2208206113	KMPS A56 PNP	
Q908 - Q913	2208622106	DTC114YS NPN	
Q914	2208622105	DTA114YS PNP	
Q915	2208622106	DTC114YS NPN	
Q916	2208622105	DTA114YS PNP	
Q917	2208622106	DTC114YS NPN	
Variable Resistors			
VR101L/R	3248020343	Semi 20kΩ(B)	
VR201L/R	3248020343	Semi 20kΩ(B)	
VR501	3248050243	Semi 5kΩ(B)	
VR502L/R	3248050343	Semi 50kΩ(B)	
VR601	3248050343	Semi 50kΩ(B)	
VR602	3248020243	Semi 2kΩ(B)	
VR603	3248020343	Semi 20kΩ(B)	
VR901	3248010243	Semi 1kΩ(B)	
VR902	3248010243	Semi 1kΩ(B)	
VR903	3248010243	Semi 1kΩ(B)	
VR904	3248010243	Semi 1kΩ(B)	
Other			
	4228001410	Terminal Ground	
Front P.C.Board			
Connector			
CNT701	436212122132	Ass'y 12P 120mm to LCD Board	

Ref.No	Part No.	Description	Remark
Diodes			
D703 - 705	2058322101	1N4148M	
Resistors			
R712 - R715	3069103970	10kΩ	
Dolby P.C.Board			
Capacitors			
C301L/R	3479247971	Electric SA 4.7uF 50V M	
C302L/R		Not used !	
C303	3479210131	Electric SA 100uF 16V M	
C304L/R	3479210971	Electric SA 1uF 50V M	
C305L/R	3519561935	Ceramic 560pF 50V Z	
C306	3479210121	Electric SA 100uF 10V M	
C307	3479222071	Electric SA 22uF 50V M	
C308L/R	3479210071	Electric SA 10uF 50V M	
C309L/R	3479210071	Electric SA 10uF 50V M	
C310L/R	3479247971	Electric SA 4.7uF 50V M	
C311L/R	3479247971	Electric SA 4.7uF 50V M	
C312L/R	3479210971	Electric SA 1uF 50V M	
C313L/R	3479233041	Electric SA 33uF 25V M	
C314	3479210971	Electric SA 1uF 50V M	
C401	3479210971	Electric SA 1uF 50V M	
C402	3479210071	Electric SA 10uF 50V M	
C403	3479210871	Electric SA 0.1uF 50V M	
C404	3479222971	Electric SA 2.2uF 50V M	
C405	3479322121	Electric SA 220uF 10V M	
Connectors			
CNT301	4428550080	Plug 8P	
CNT302	4428550080	Plug 8P	
Diode			
D401	2058322101	1N4148M	
IC			
IC301	2168011133	HA12136A, Dolby	
Resistors			
R301L/R	3069473970	47kΩ	
R302L/R		Not used !	
R303L/R	3069242970	2.4kΩ	
R304	3069100970	10Ω	
R305/R306	3069103970	10kΩ	
R307	3069183970	18kΩ	
R308		Not used !	
R309	3069473970	47kΩ	
R310		Not used !	
R311L/R	3069472970	4.7kΩ	
R312L/R	3069394970	390kΩ	
R313L/R	3069224970	220kΩ	
R314L/R	3069102970	1kΩ	
R403	3069474970	470kΩ	
R404	3069512970	5.1kΩ	
R405	3069102970	1kΩ	
R406	3069563970	56kΩ	
R407	3069562970	5.6kΩ	
R408	3069335970	3.3MΩ	
R409	3069102970	1kΩ	
R410L/R	3069562970	5.6kΩ	
R411L/R	3069102970	1kΩ	
R412	3069332970	3.3kΩ	
R413L/R	3069302970	3kΩ	

Ref.No	Part No.	Description	Remark
Transistors			
Q301L/R	2208606104	KTC3198Y NPN	
Q401 - Q405	2208606104	KTC3198Y NPN	
LCD P.C. Board			
Capacitors			
C701	3479210121	Electric SA	100uF 10V M
C702	3519223935	Ceramic	0.022uF 50V Z
C703	3479210971	Electric SA	1uF 50V M
C706	3519820935	Ceramic	82pF 50V Z
C707	3479210971	Electric SA	1uF 50V M
C708	3479247871	Electric SA	0.47uF 50V M
C709	3519103935	Ceramic	0.01uF 50V Z
C710	3479210971	Electric SA	1uF 50V M
Trimmer Capacitor			
TC701	3838001170	Trimmer	
Connectors			
CNT701	4428517110	Plug 12P	
CNT702	4428516110	Plug 2P	
CNT703	4119212224	Flat Wire 12P to Main B'D	
CNT704	4119213224	Flat Wire 13P to Main B'D	
Diodes			
D701 - 702	2058322101	1N4148M	
D703	.	Not used !	
D706 - 707	2058322101	1N4148M	
D708	2058599105	Zener, UZ 6.2B	
D709	2058599123	Zener, UZ 8.2B	
D710 - 711	2058322101	1N4148M	
D712 - 713	2058106100	1N4002	
IC			
IC701	2138313159	u-com, uPD75308GF - C7	
LCD			
LCD	2338009917	SLC - 70030RS	
Resistors			
R701	3069102970	1kΩ	
R702	3069104970	100kΩ	
R703	3069334970	330kΩ	
R704	3069103970	10kΩ	
R705	3069103970	10kΩ	Domestic
R706	3069104970	100kΩ	Domestic,A
R707	3069101970	100Ω	
R708 - 709	3069102970	1kΩ	
R710 - 711	3039680572	M.O., 68Ω 2W	
R713	3069100970	10Ω	
R717	3069103970	10kΩ	
R718 - 720	3069333970	33kΩ	
	3088473173	47kΩ, Array Resistor	

Ref.No	Part No.	Description	Remark
Transistors			
Q701	2208206105	KTA1015Y PNP	
Q702	2208606104	KTC1815Y NPN	
Others			
X701	3938101880	Resonator, 4.19MHz	
X702	3908101060	X-Tal, 32.768kHz	
Battery	5518001500	Battery, NI-CD 3/60R	
Lamp P.C. Board			
Connector			
CNT702	436212122132	Ass'y 2P, to LCD B'D	
LED(A) P.C. Board			
LEDs			
D909 - D910	2381215701	SLR - 34URC - 80F	
Connector			
CNT903	435103262442	Ass'y 3P 260mm to Main B'D	
LED(B) P.C. Board			
LEDs			
D911 - D912	2381215301	SLR - 34GC - 80F	
Connector			
CNT904	435103262492	Ass'y 3P 260mm to Main Board	

Mechanical Parts List (TDD-33R)

No.	Description	Part No.	Q'ty	Remark		No.	Description	Part No.	Q'ty	Remark
1	Panel Front, Black	048501023911	1	Dom.		27	Fastener	6525300210	2	
1	Panel Front, Black	048501023912		Sherwood		28	Plate Ground	6065104510	1	
1	Panel Front, Silver	048501023921		Dom.		29	Top Cover, Black	046121002111	1	
1	Panel Front, Silver	048501023922		Sherwood		29	Top Cover, Silver	046121002113		
2	Door, A, Black	048562002611	1	Dom.		30	Chassis Main	6121608510	1	
2	Door, A, Black	048562002612		Sherwood		31	Chassis Back, Black	046102033411	1	Dom.
2	Door, A, Silver	048562002621		Dom.		31	Chassis Back, Silver	046102033412		Dom.
2	Door, A, Silver	048562002622		Sherwood		31	Chassis Back, Silver	046102033413		Sherwood
3	Door, B, Black	048562002711	1	Dom.		31	Chassis Back, Black	046102033413		Sherwood
3	Door, B, Black	048562002712		Sherwood		32	Bracket LCD Board	6123622010	1	
3	Door, B, Silver	048562002721		Dom.		33	Holder LCD	6513005410	1	
3	Door, B, Silver	048562002722		Sherwood		34	Filter LCD	048535036711	1	
4	LID Casser, Black	8562002810	2			35	Diffuser	8535038010	2	
4	LID Casser, Silver	8562002820				36	Foot	6715020610	4	
5	Button Tunner, Black	048543043811	1	Dom.		37	Support P.C. Board	6528301610	2	
5	Button Tunner, Black	048543043812		Sherwood		38	Terminal Antenna	4408001510	1	Dom.,A
5	Button Tunner, Silver	048543043821		Dom.		38	Terminal Antenna	4408001610	1	Sherwood
5	Button Tunner, Silver	048543043822		Sherwood		39	Terminal 9P	4428570090	1	
6	Button 3Key, Black	8545096710	1			40	Terminal 11P	4428570110	1	
6	Button 3Key, Silver	8545096720				41	LCD	2338009917	1	
7	Button 2Key, Black	8545096610	2			42	Switch Slide	4618008020	2	
7	Button 2Key, Silver	8545096620				43	Switch Tact	4658003710	12	
8	Knob Slide A, Black	8545097110	1			44	Switch Reset	4658003610	1	
8	Knob Slide A, Silver	8545097115				45	Lamp	2528203810	2	
9	Knob Slide B, Black	8545097120	1							
9	Knob Slide B, Silver	8545097125								
10	Button REC., Black	048545096911	1							
10	Button REC., Silver	048545096921								
11	Button Play A, Black	048545096811	1							
11	Button Play A, Silver	048545096821								
12	Button REW, Black	048545096812	2							
12	Button REW, Silver	048545096822								
13	Button FF, Black	048545096813	2							
13	Button FF, Silver	048545096823								
14	Button ST/EJ, Black	048545096814	2							
14	Button ST/EJ, Black	048545096824								
15	Button Pause, Black	048545096815	1							
15	Button Pause, Silver	048545096825								
16	Button Mode, Black	048545096816	1							
16	Button Mode, Silver	048545096826								
17	Button Play B, Black	048545096817	1							
17	Button Play B, Silver	048545096827								
18	Button Drctn, Black	048545097011	1							
18	Button Drctn, Silver	048545097021								
19	Bracket MTG	6305006410	1							
20	Inlay Tuner, Black	048535036012	1							
20	Inlay Tuner, Silver	048535036014								
20	Inlay Tuner, Silver	048535036017								
21	Window Door A, Black	048562002611	1	Dom.						
21	Window Door A, Black	048562002612		Sherwood						
21	Window Door A, Silver	048562002621		Dom.						
21	Window Door A, Silver	048562002622		Sherwood						
22	Window Door B, Black	048562002711	1	Dom.						
22	Window Door B, Black	048562002712		Sherwood						
22	Window Door B, Silver	048562002721		Dom.						
22	Window Door B, Silver	048562002722		Sherwood						
23	Deck Mechanism A	5708012710	1							
24	Deck Mechanism B	5708012810	1							
25	Damper OIL	6308001630	2							
26	Spring Door	6555607210	2							

Mechanical Parts List(I) (Deck Mechanism Ass'y)

MODEL NAME : TN-21ZSC-857

Model No. : TDD-33R

No.	Part No	Description	Q'ty	Remark
1	192114301	Base Ass'y	1	
2	19211409	Switch Actuator	1	
3	19211408	Push Button Actuator	1	
4	19211422	REC Button Lever	1	
5	19211423	Play Button Lever	1	
6	19211424	Rew Button Lever	1	
7	19211425	FF Button Lever	1	
8	19211426	Stop Button Lever	1	
9	19211427	Pause Button Lever	1	
10	19211413	P Control Spring	1	
11	19211410	Pause Lever	1	
12	19211412	Pause Lever Spring	1	
13	19211411	Pause Stopper	1	
14	19211414	Button Lever Spring(A)	1	
15	192101501	Chassis Ass'y	1	
16	19211416	E Actuator Spring	1	
17	19211417	P.S. Lever Spring	1	
18	15100202	REC Spring Plate	1	
19	182101159	E Kick Lever	1	
20	19211420	PR Stopper	1	
21	19211421	REC Button Lever Spring	1	
22	19211415	Button Lever Spring(B)	1	
23	640101149	Leaf Switch MSW - 1541T	1	
24	.	Not used !		
25	19210314	Head Panel	1	
26	19210306	Head Base	1	
27	19210303	Panel P Spring	1	
28	18210308	EH Spring	1	
29	18210307	Azimuth Spring	1	
30	19211418	M Control Spring	1	
31	.	Not used !		
32	192104301	Pinch Roller Arm Ass'y	1	
33/34	.	Not used !		
35	19212604	Sensing Lever	1	
36	19212605	Gear Plate Spring	1	
37	192126501	Gear Plate Ass'y	1	
38	19212602	Cam Gear	1	
39	.	Not used !		
40	192107301	RF Clutch Ass'y	1	
41	19210703	RF Belt	1	
42	.	Not used !		
43	192109303	FLYWHEEL Ass'y	1	
44	.	Not used !	1	
45	18211070	FF Gear	1	
46	18291010	Back Tension Spring	1	
47	192105302	Supply Reel Ass'y	1	
48	192105301	Take up Reel Ass'y	1	
49	19210506	Senser	1	
50	.	Not used !		
51	18211289	Motor Bracket	1	
52	.	Not used !		
53	19211202	Motor Collier Screw	2	
54	19211201	Motor Pulley	1	
55	19210904	Main Belt	1	
56	19211203	MB Screw	1	
57	.	Not used !		
58	19211302	Eject Slide Lever	1	
59	18291001	Pack Spring	1	
60	18211069	Record Safety Lever	1	
61	.	Not used !		
62	.	RP Head SS15R - AA4NI	1	

No.	Part No	Description	Q'ty	Remark
63	.	E Head LE15A - C1	1	
64	.	Motor EG530KD - 2B	1	
65	.	C Tapping Screw M2×3	2	
66	91790000	Not used !		
67	.	P Tapping Bind Screw M2×5	2	
68	96790000	Tapping Screw(For Camera)M2×4.5	2	
69	99991809	⊕Bind Screw M2×3	1	
70	91150000	⊕⊖Cap Screw M2×8	2	
71	98210000	Azimuth Screw M2×7	1	
72	99220000	Not used !		
73/74	.	P Washer Cut 1.2×3.8×0.3	1	
75	94220000	P Washer Cut 1.45×3.8×0.5	1	
76	99990313	P Washer 2×3.5×0.3	1	
77	97860000	Not used !		
78	.	Stapping Screw (For Camera)M2×8(Guide)	2	
79	99991402	B Frame(S)	1	
80	18213106	Operation Lever	1	
81	18213107	Button Lever Shaft	1	
82	18293103	Not used !		
83/84	.	Leaf Switch MSW - 1664	1	
85	640101125	Cap Screw 2×5	1	
86	96610000			

Mechanical Parts List(II) (Deck Mechanism Ass'y)

MODEL NAME : TN-51S-149

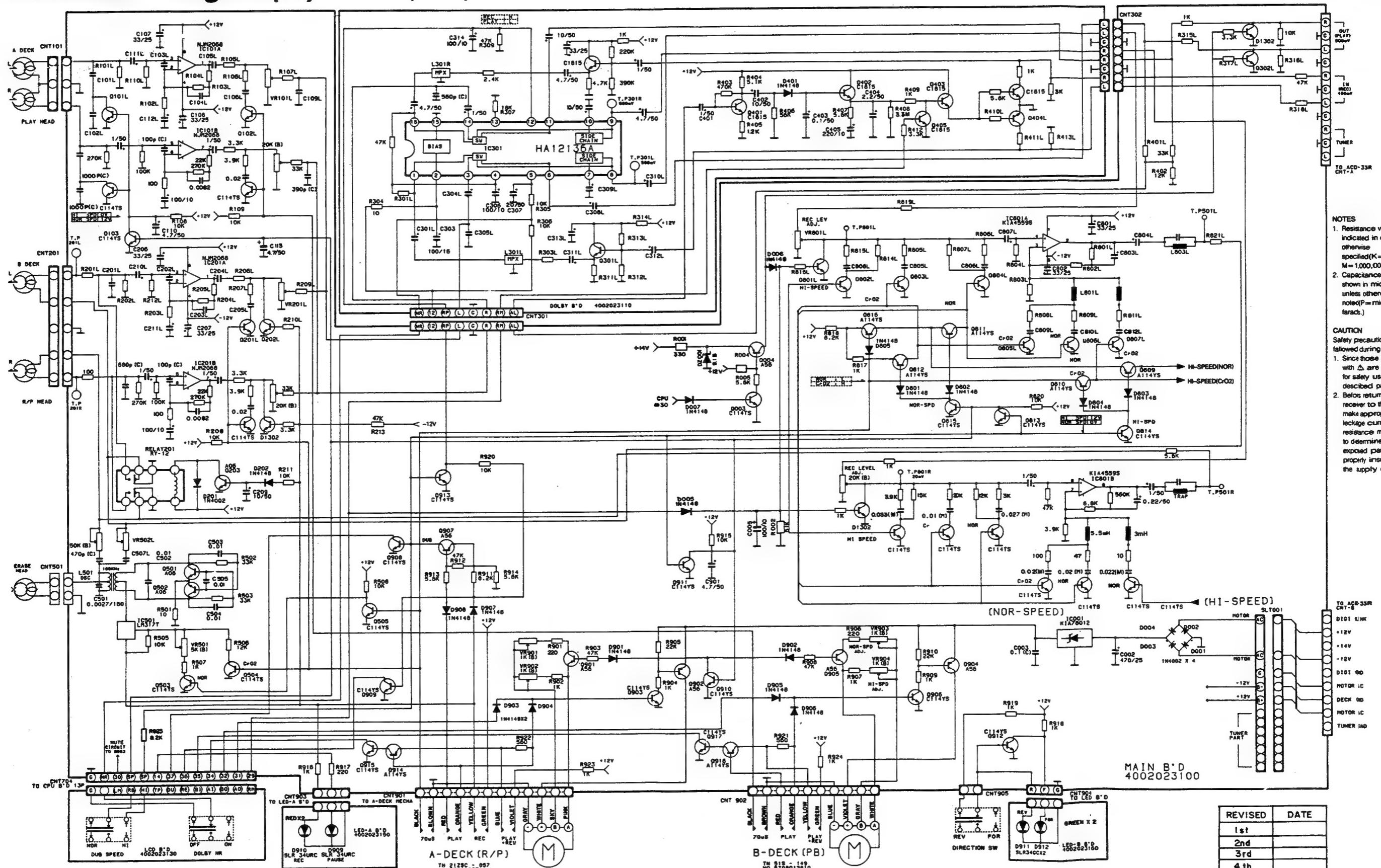
Model No. : TDD-33R

No.	Part No	Description	Q'ty	Remark
1	185101301	Chassis Ass'y	1	
2	18210115	Pause Lever	1	
3	18210116	Pause Lever Spring	1	
4	18291006	Pack Spring Plate	1	
5	18512001	Auto Lever(F)	1	
6	18512003	Auto Lever(R) Spring	1	
7	18512005	Spring Stopper	2	
8	18512002	Auto Lever(R)	1	
9	18512004	Auto Lever Spring(F)	1	
10	18511703	Eject Slide Lever	1	
11	18511702	Eject Slide Lever Spring	1	
12	18211223	P.K. Collier Screw(A)	3	
13	185118301	SUB Chassis Ass'y	1	
14	18510301	Turn Over Arm	1	
15	18510302	Turn Over Spring	1	
16	185102501	Button Base Ass'y	1	
17	185105301	T. Gear Arm(F) Ass'y	1	
18	18510504	T. Gear Arm(F) Spring	1	
19	18510503	T.CAM Gear(F)	1	
20	185106301	T.Gear Arm(R) Ass'y	1	
21	18510603	T. Gear Arm(R) Spring	1	
22	18510602	T.CAM Gear(R)	11	
23	18510217	Slide Plate	1	
24	185102301	Lock Actuator Ass'y	1	
25	18510220	Lock Release Spring	1	
26	185102302	Switch Actuator Ass'y	1	
27	185102309	Mode Button Ass'y(S)	1	
28	18510222	Button Lever Spring	3	
29	18510232	Play Button Lever(S)	1	
30	18510235	FF Button Lever R(S)	1	
31	18510224	FF Button Lever Spring	2	
32	18510234	FF Button Lever F(S)	1	
33	18510231	Stop Button Lever(S)	1	
34	185102304	Program Button Lever(S)	1	
35	18510227	Pull Arm Spring	1	
36	18510221	Stop Button Lever Spring	1	
37	18510408	Relay Plate	1	
38	18511602	FF Switch Plate	1	
39	18510410	R.C. Spring	1	
40	18511805	Auto Control Arm(F)	1	
41	18511807	Control Collier	2	
42	18511806	Auto Control Arm(R)	1	
43	18510401	Head Panel	1	
44	18510402	R.C. Plate	1	
45	18510409	R.C. Plate Spring	1	
46	18510404	H.P. Collier	1	
47	18510403	Tape Guide	1	
48	18510405	Head Spring Plate	1	
49	MR35P - KF243	P. Head	1	
50	64030204	Slide Switch R663167	1	
51	18511601	Switch Bracket	1	
52	18510406	Pinch Roller Spring(F)	1	
53	18510407	Pinch Roller Spring(R)	1	
54	185109501	Pinch Roller(F) Ass'y	1	
55	185110501	Pinch Roller(R) Ass'y	1	
56	185111301	Reel Plate Ass'y	1	
57	185111501	Reel Ass'y	2	
58	640101151	Leaf Switch MSW - 1290CV	1	
59	640101125	Lief Switch MSW - 1664	1	
60	185107301	FF Gear Arm(F) Ass'y	1	
61	18510703	FF Gear	2	

No.	Part No	Description	Q'ty	Remark
62	185108301	FF Gear Arm(R) Ass'y	1	
63	18510705	FF Gear Arm Collier	2	
64	18510704	FF Gear Arm Spring(F)	2	
65	185112501	Flywheel Ass'y	2	
66	182112142	Main Belt	1	
67	18511409	Motor Bracket	1	
68	18511406	P.Kick Lever	1	
69	18211215	P.Kick Lever B	1	
70	18211224	P.K. Collier Screw B	1	
71	18211266	Motor Rubber	1	
72	18211202	M. Collier Screw	3	
73	182112109	ANTI - Vibration Felt	1	
74	18511403	Motor Pulley	1	
75	EG - 530KD- 2B	Motor	1	
76	18511404	P. Kick Lever Spring	1	
77	18213107	Operetion Lever	6	
78	18513101	Button Frame(S)	1	
79	18293103	Button Lever Shaft	1	
80	18510225	Lock Actuator Spring	1	
81	18510226	Switch Actuator Spring	1	
82	77770013	P Washer 1.75×4×0.3	2	
83	91780000	C Tapping Screw M2×3(Special)	2	
84	96740000	P Tapping Screw M2×6	4	
85	98760000	P Washer Cut 2.1×5×0.5	3	
86	90790000	⊕Tams Screw M2×6	2	
87	96950000	Camera S Tapping Screw M1.7×4	3	
88	99992007	Screw M2×4.5	2	
89	97860000	P Washer 2×3.5×0.3	2	
90	98890000	P Washer 2.1×3×0.3	2	
91	99990309	P Washer 1.45×4×0.5	2	
92	91800000	⊕C Tapping Screw M2×4	4	
93	96920000	Camera S Tapping Screw M1.7×2.5	1	
94	94210000	P Washer Cut 1.2×3×0.25	8	
95	96930000	Camera S Tapping Screw M1.7×3	3	
96	98680000	P Washer Cut 1.2×3×0.4	2	
97	99990009	P Washer 3×8.5×0.13	2	
98	99991301	Camera S Tapping Screw M1.7×8	6	
99	99991302	Camera S Tapping Screw M2×9	2	
100	91810000	C Tapping Screw M2×5	1	
101	18511804	RC Arm	1	
102	96610000	Cap Screw 2×5	1	

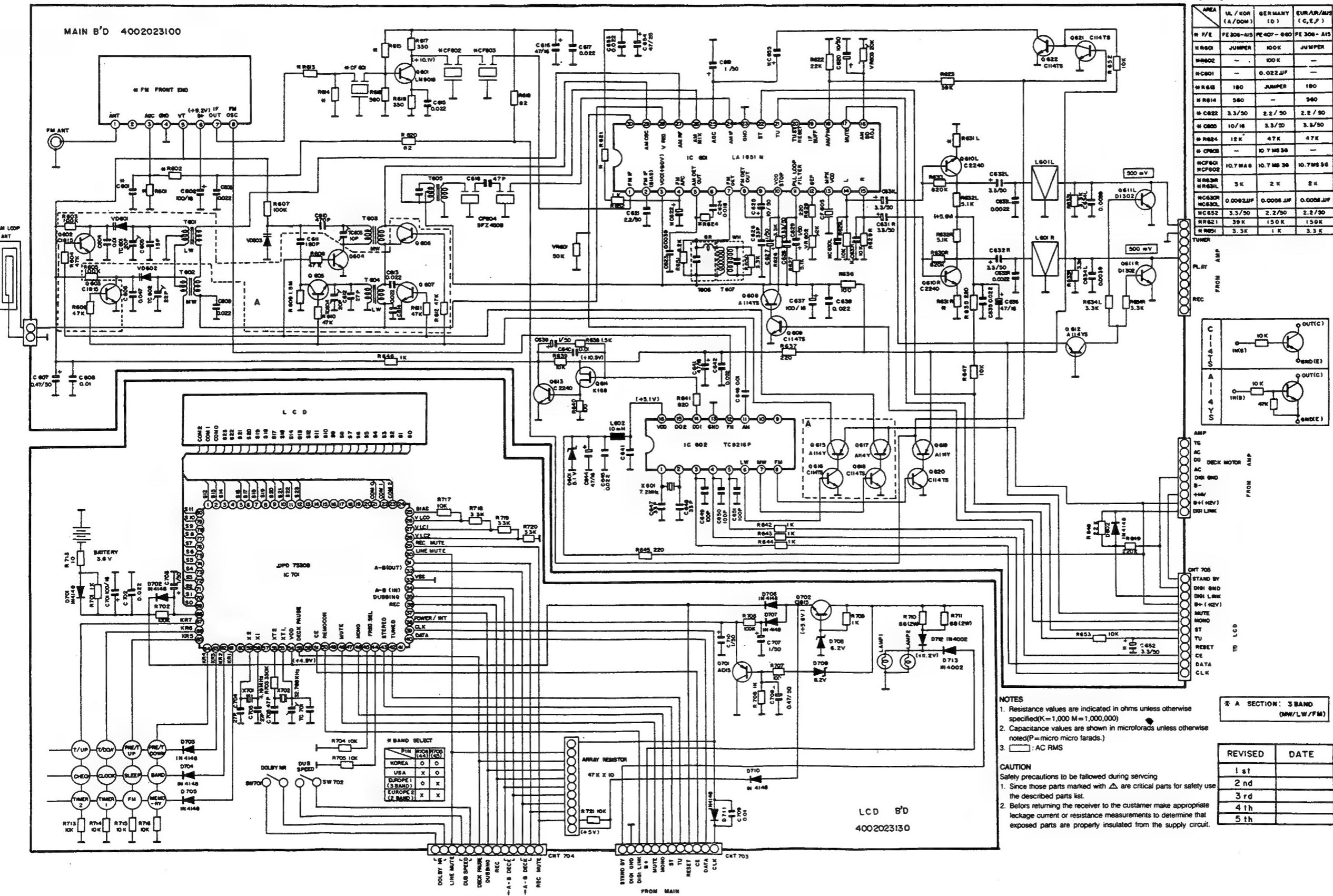
Schematic Diagram(I) TDD-33R(DECK)

Model No. : TDD-33R



Schematic Diagram(II) TDD-33R(TUNER)

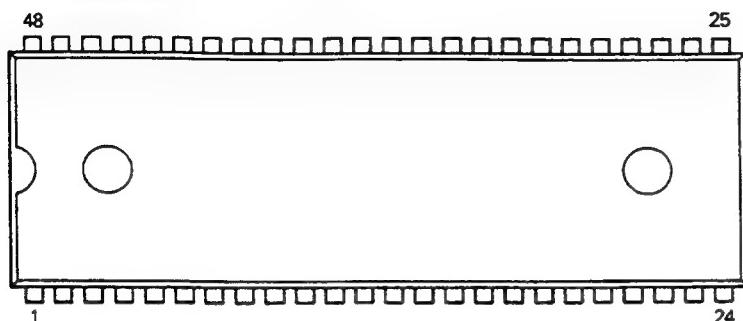
Model No. : TDD-33R



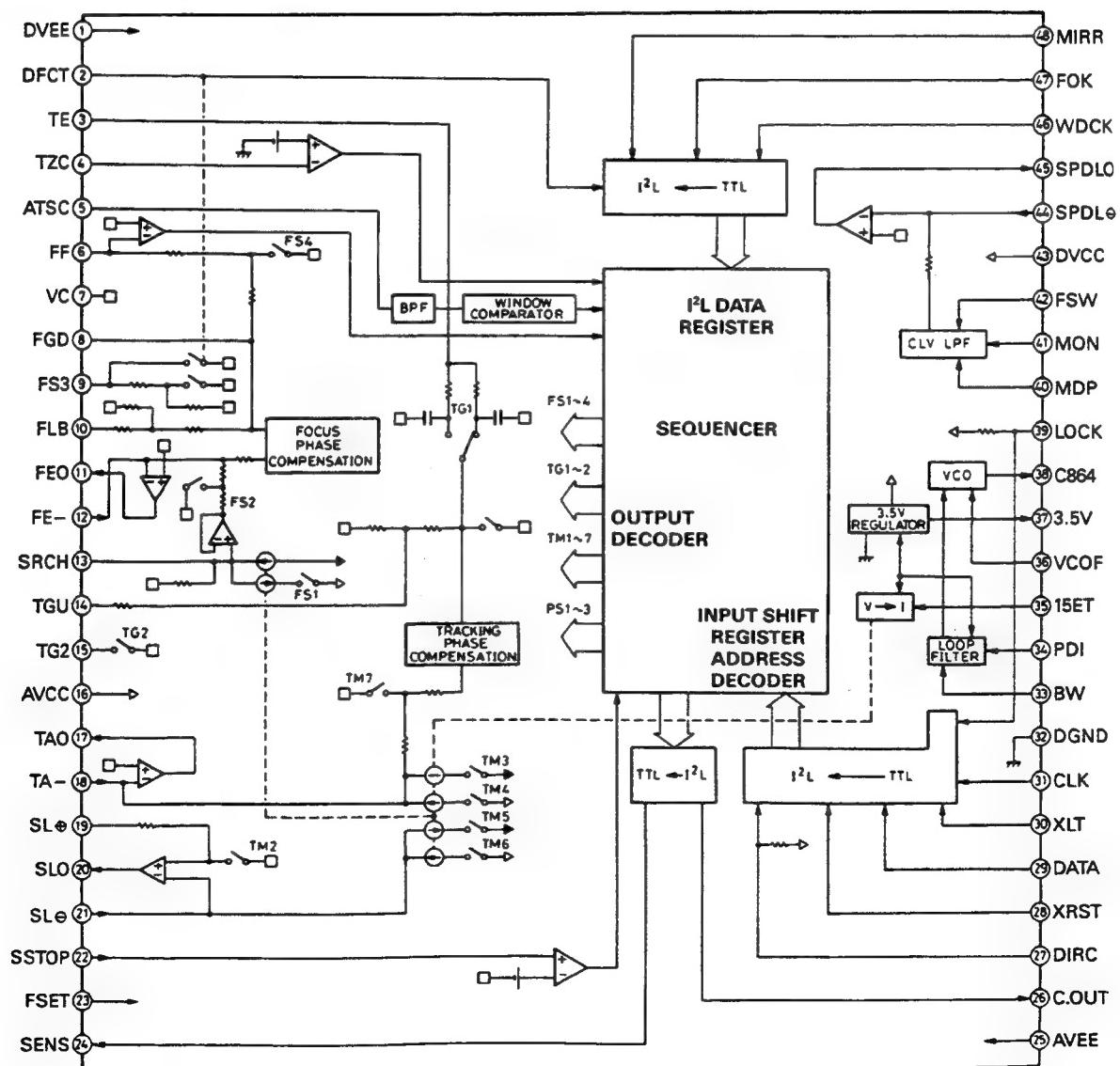
Semiconductor Lead Identification & Internal Diagram

P-33R(AMP,CDP,TUNER,DECK)

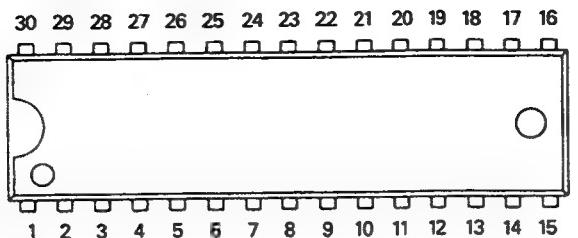
CXA1082,SSP : IC102



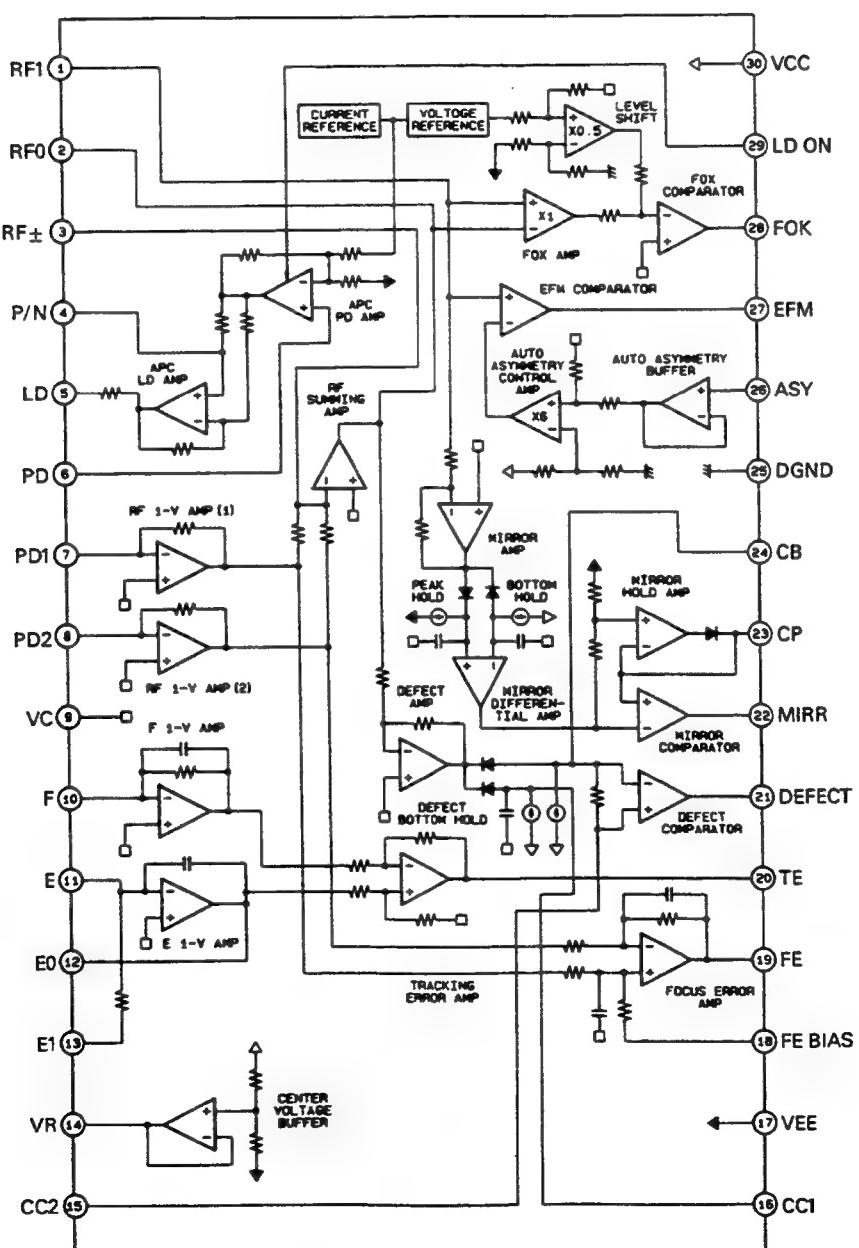
Servo Signal Processor



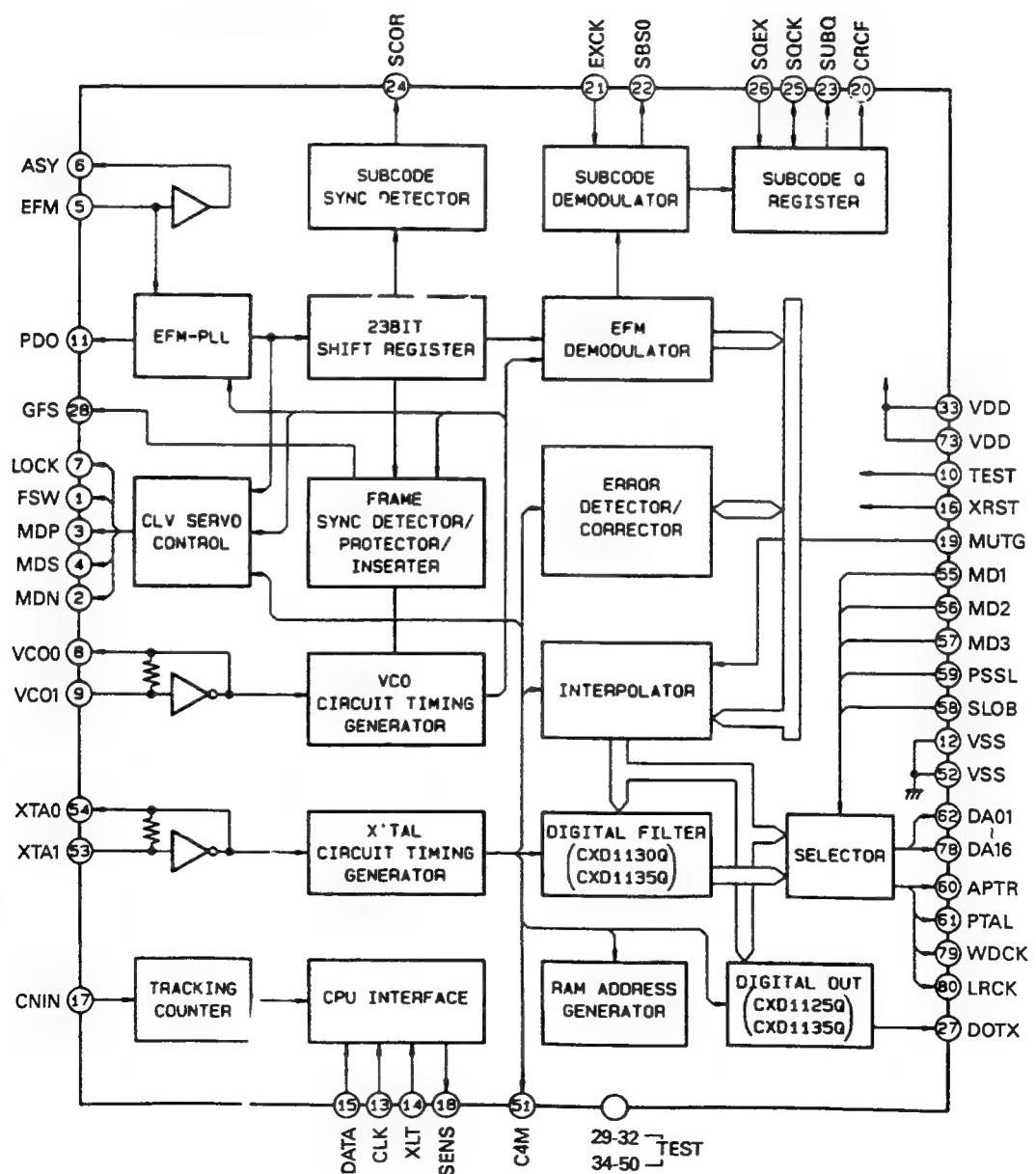
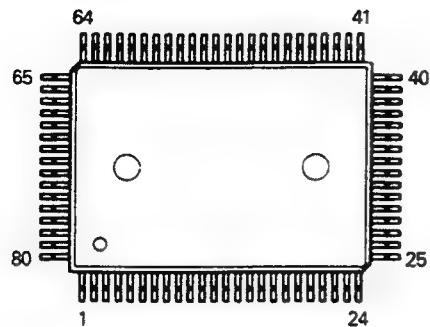
CXA1081, RF AMP : IC101



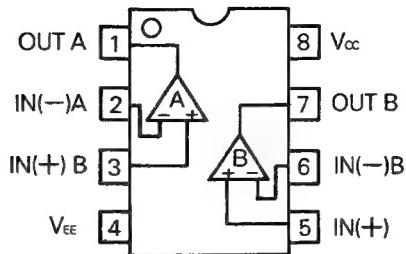
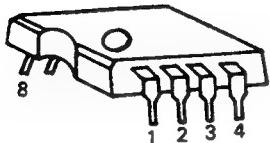
RF Amp.



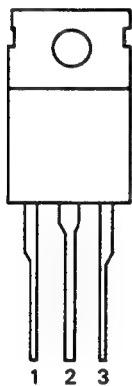
CXD1167Q,DSP : IC103



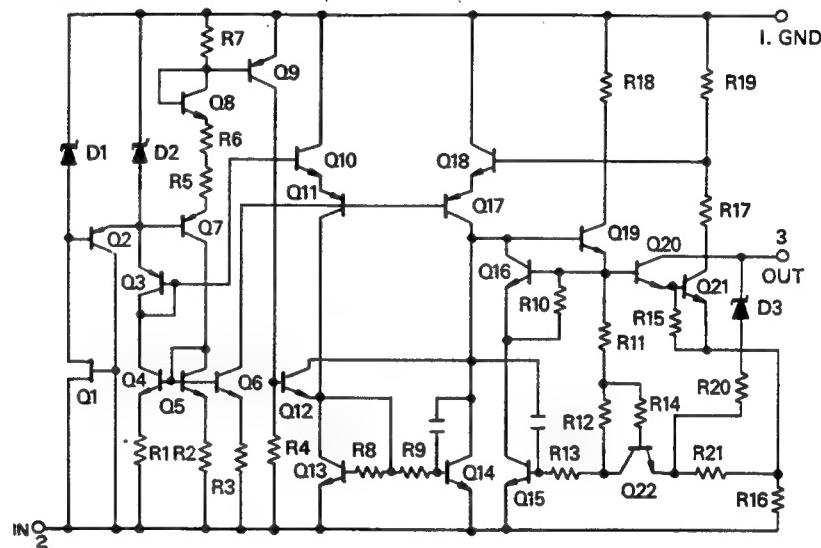
MC4558,OP AMP : IC107
NJM4560,OP AMP : IC106



MC7905 : IC001

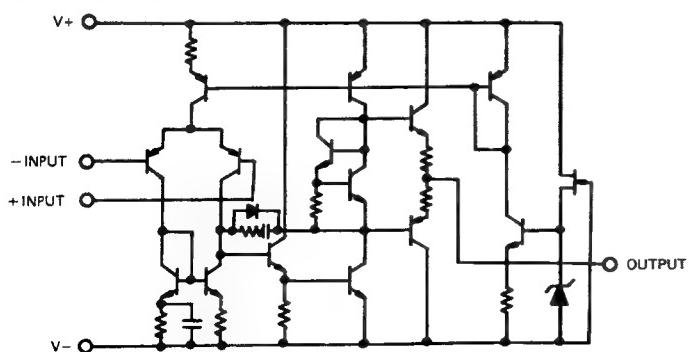


REGULATOR

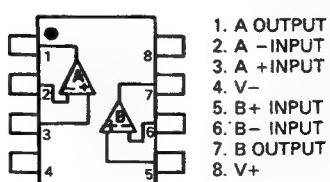


NJM2068D(PB AMP) : IC101,IC201

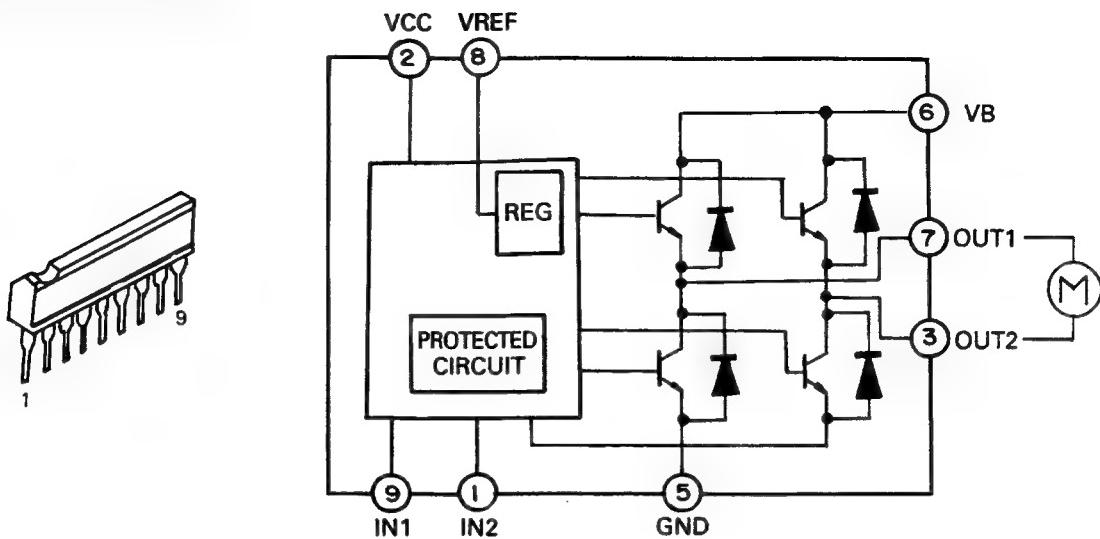
Equivalent Circuit



(TOP VIEW)

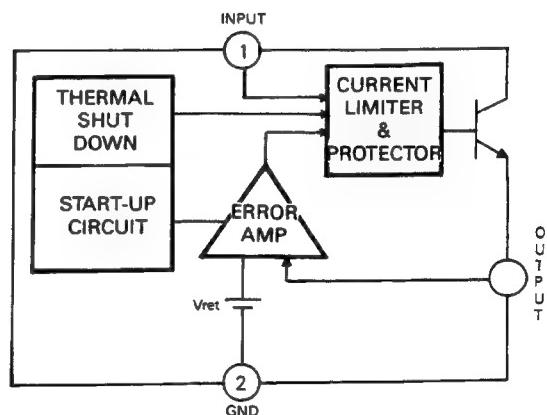
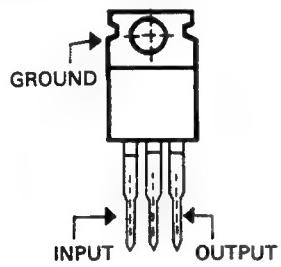


TA7291S(MOTOR CONTROL) : IC201

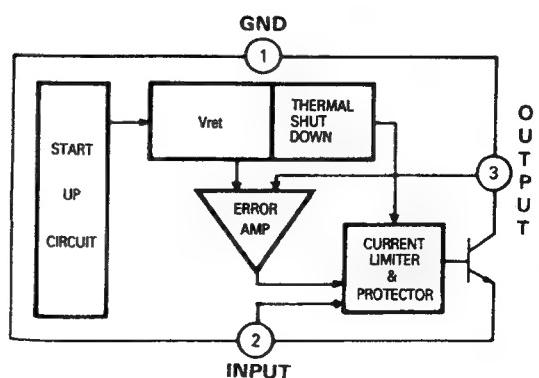
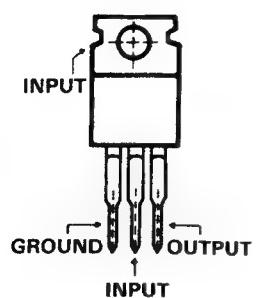


GD7812 : IC701, IC704

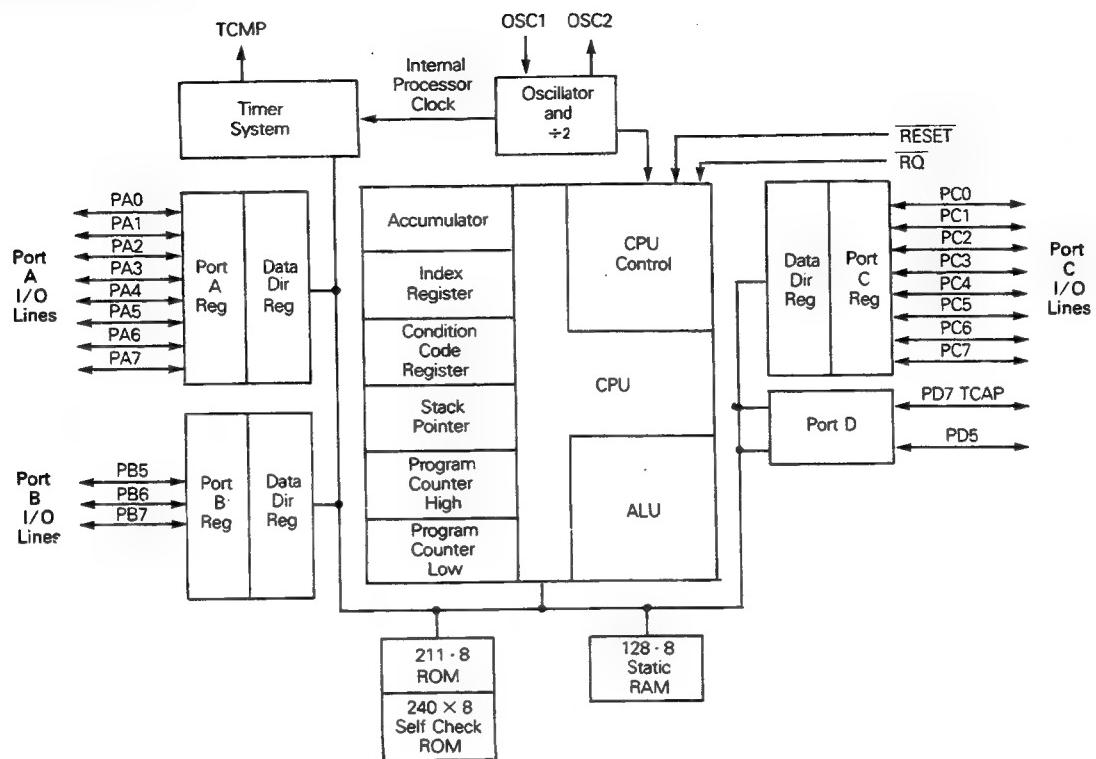
GD7805 : IC703, IC705



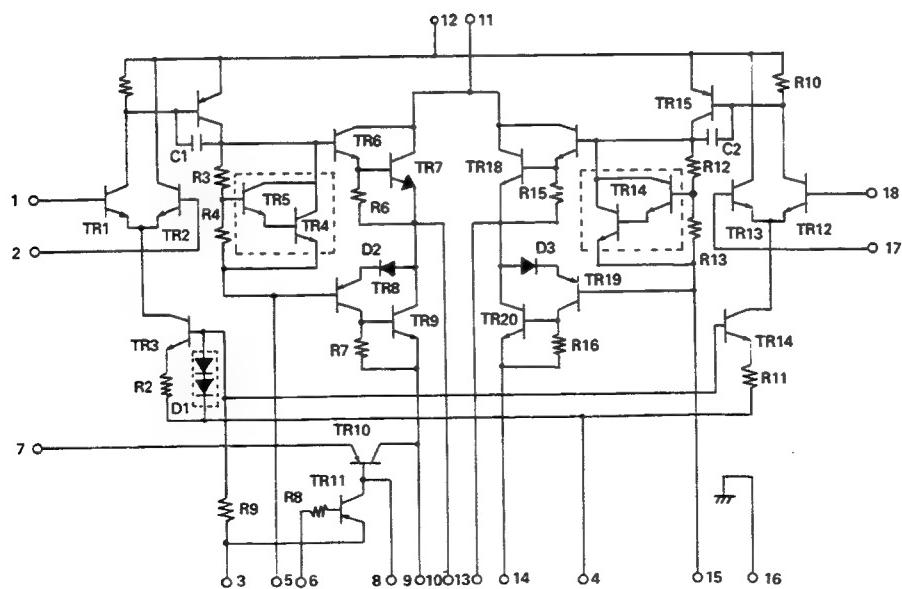
GD7912 : IC704



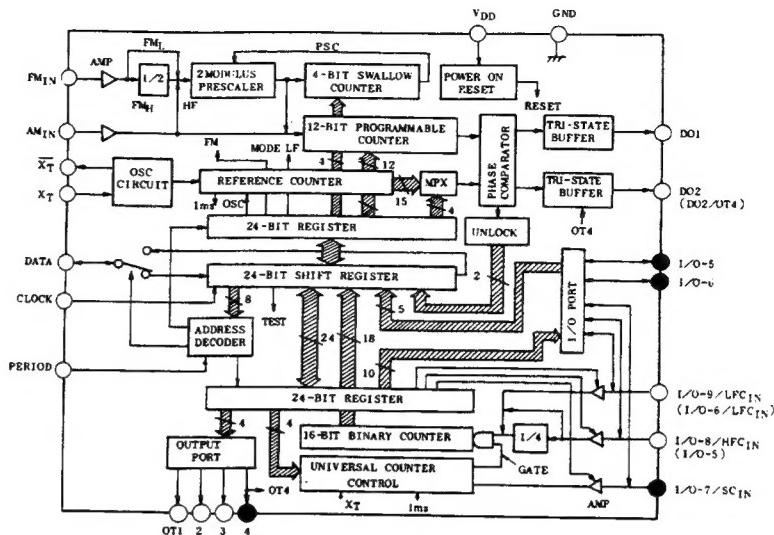
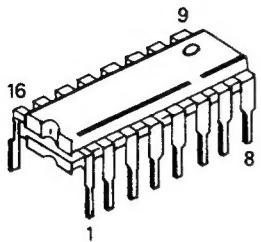
DWP112CPU : IC501



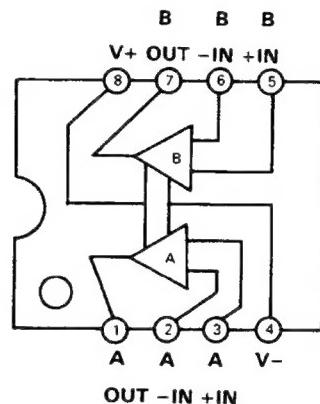
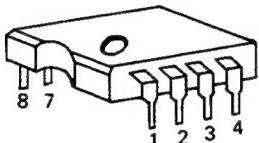
STK4142 II : IC401



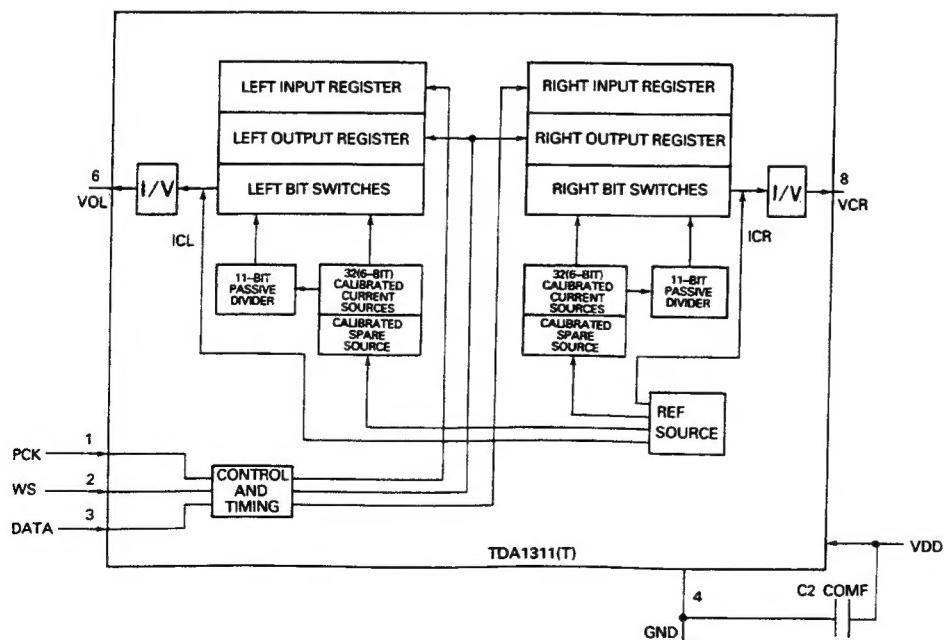
TC9216P(PLL) : IC602



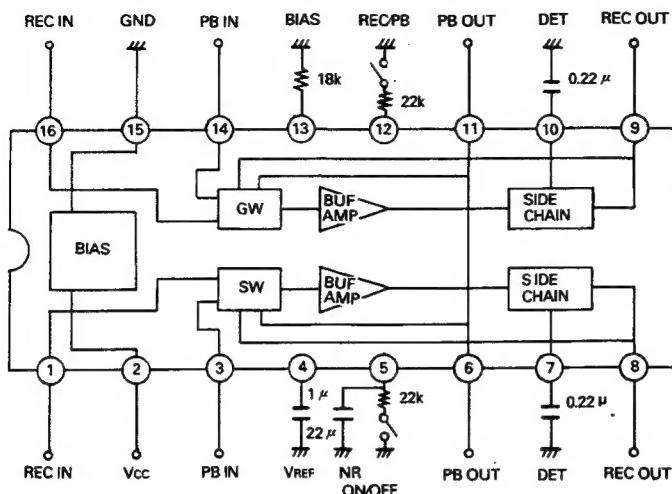
KIA4559S(REC AMP) : IC801



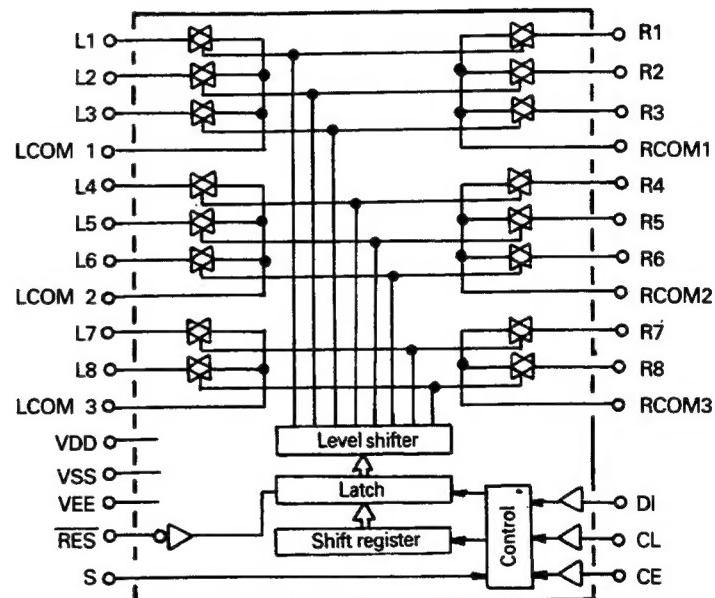
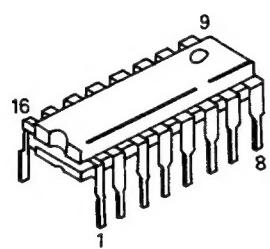
TDA 1311,DAC : IC105



MA12136A : IC301

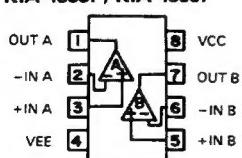


LC7821 : IC101

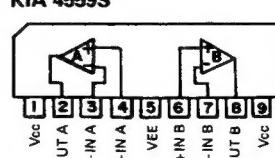


KIA4559P(DUAL OP AMP) : IC102-IC106,IC202,IC301,IC601

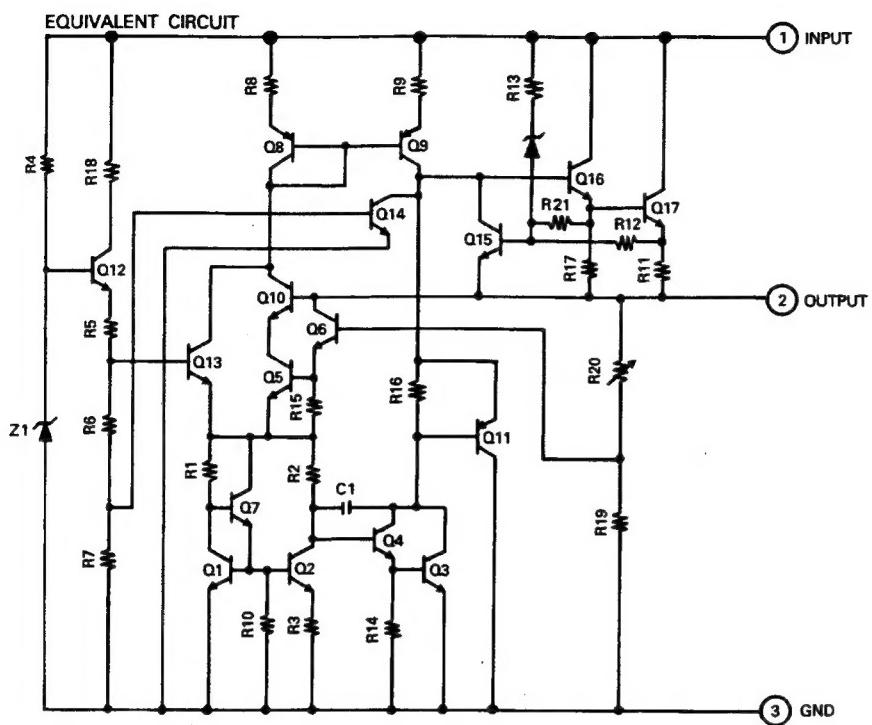
KIA 4559P, KIA 4559F



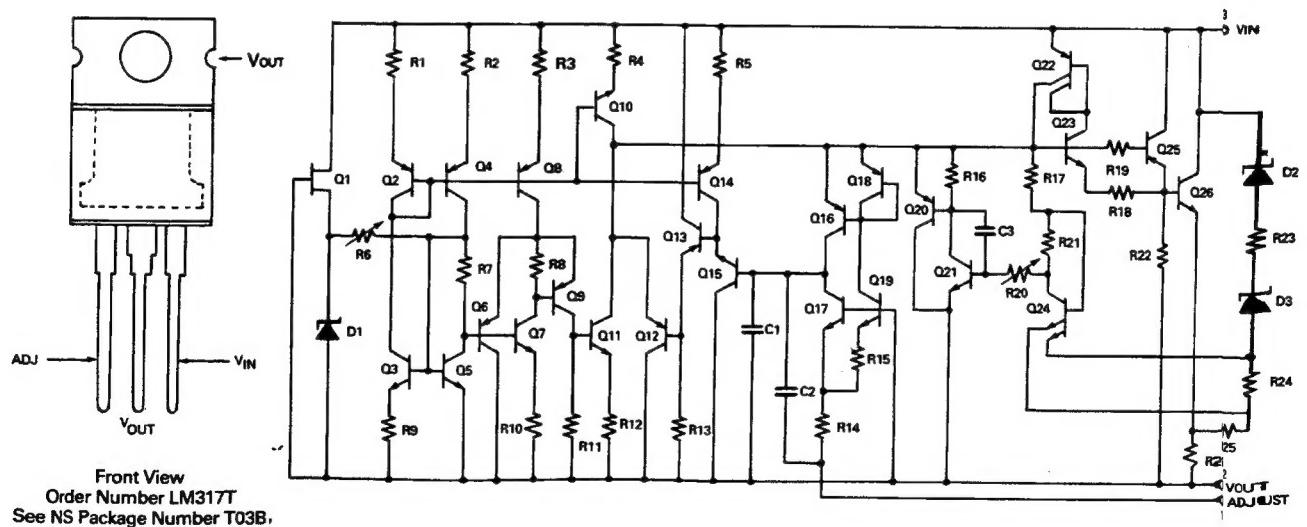
KIA 4559S



KIA78012AP(Regula502) : IC001



LM317(Regula502) : IC501



LA185IN(IF+MPX) : IC601

